COLLINGWOOD
HERSCHEL
LIBRARY.

from the Edinburgh Observato

ASTRONOMICAL OBSERVATIONS

MADE AT

THE ROYAL OBSERVATORY, EDINBURGH.

BY THE LATE

THOMAS HENDERSON, F.R.SS.L. & E., F.R.A.S.,

PROFESSOR OF PRACTICAL ASTRONOMY IN THE UNIVERSITY OF EDINBURGH,
AND HER MAJESTY'S ASTRONOMER FOR SCOTLAND.

REDUCED AND EDITED BY HIS SUCCESSOR,

CHARLES PIAZZI SMYTH.

VOL. VI.

FOR THE YEAR 1840.

PUBLISHED BY ORDER OF HER MAJESTY'S GOVERNMENT.

26445.

EDINBURGH:
PRINTED BY NEILL AND COMPANY;
AND
SOLD BY ADAM AND CHARLES BLACK,
BOOKSELLERS TO HER MAJESTY FOR SCOTLAND.

MDCCCXLVII.

TABLE OF CONTENTS.

PAGE

PREFACE V

INTRODUCTION VII

Situation of the Observatory VII
Subjects of observation VII

OBSERVATIONS MADE WITH THE TRANSIT INSTRUMENT 1

Mean Right Ascensions of Stars observed 51

ELEMENTS FOR REDUCING THE OBSERVATIONS MADE WITH THE TRANSIT INSTRUMENT 61
Intervals of Transit Wires 62
Correction of Observed Transits 62
Error of Collimation 64
Deviation of Instrument from Pole 68
Deviation of Instrument from Meridian at Equator 68
Inclination of Axis 69
Catalogue of Mean Right Ascensions of Standard Stars 73
Correction of Clock 75
Right Ascensions of Stars deduced from observation 77

OBSERVATIONS MADE WITH THE MURAL CIRCLE 79

Mean Declinations of the Stars observed 115

ELEMENTS FOR REDUCING THE OBSERVATIONS MADE WITH THE MURAL CIRCLE 123

Correction of the mean readings of two Microscopes 124
Runs of Microscopes 125
Correction of Circle-Clock 126
Deviation of Middle wire of Circle from Meridian 128
Reduction to Meridian 128
Calculation of Refractions 129
Catalogue of Declinations of Standard Stars 129
Equatorial Point 131
Declinations of Stars deduced from observations 132

CATALOGUE OF MEAN RIGHT ASCENSIONS AND DECLINATIONS OF THE STARS OBSERVED, AND REDUCED OBSERVATIONS OF THE SUN, MOON, AND PLANETS 133

Mean Right Ascensions and Declinations of the Stars observed 134
Observed Sidereal Times of the Sun's Diameter passing the Meridian 139
Vertical Diameter of the Sun observed with the Mural Circle 140
Observed Sidereal Time of the Moon's Diameter passing the Meridian 141
Vertical Diameter of the Moon observed with the Mural Circle 141

PAGE
Observed Right Ascensions and Declinations of the Sun 141
.... Moon 145
.... Mercury 147
.... Venus 148
.... Mars 149
.... Vesta 150
.... Juno 150
.... Pallas 151
.... Jupiter 151
.... Saturn 152
.... Uranus 152

EXPLANATION OF THE REDUCTION OF THE PLANETARY OBSERVATIONS 153
Corrections applied to Moon's Parallax and Diameter 153
Calculation of Parallaxes in Declination 154

OBSERVED LUNAR OCCULTATIONS AND ECLIPSES OF JUPITER'S SATELLITES 155

REPORT TO THE PRINCIPAL SECRETARY OF STATE ON THE CONDITION OF THE OBSERVATORY, September 30, 1846.

PREFACE.

On my arrival here last February, a large arrear of the observations of my predecessor being found in an unreduced state (as more particularly described in the Report appended to this volume), and, as it appeared impossible, with the present establishment, to bring up the old work, while still carrying on the comprehensive system of observing established by Professor HENDERSON, I came to the determination, rather than that his labours should be neglected, or the business of the establishment fall back further in arrear, to discontinue for a time the principal part of the Meridian Observations, so as to be able to apply more uninterruptedly to the calculation and publication of the stores of valuable matter already obtained.

The ultimate aim of Astronomical Observations being the improvement of theory, the former are manifestly of no service until they have been brought, by calculation, into such a shape as to be capable of comparison with the results of the latter. That this reduction should be effected soon after the observations have been made, was strikingly exhibited a few years ago in Professor HENDERSON's own case, when he found, in 1839 (the epoch of BESSEL's discovery of the parallax of 61 Cygni), that his Cape Observations of 1832–3 contained within them the first really satisfactory indications of stellar parallax.

Although, then, the Observatory may have temporarily ceased from amassing its usual quantity of Astronomical facts, it may still, perhaps, be considered to be as usefully employed in rendering available for the use of mathematicians, and the real promotion of astronomy, all the materials which have been accumulated during past years.

The present volume is the first step which has been taken in this direction, and its appearance has been considerably delayed by the many little preparations requisite on the occasion of such a commencement, but the remainder may be expected to be published much more rapidly.

The object proposed in the computing of these observations is, to exhibit in each annual volume the comparison of the Planetary observed places with the computed ones in the Nautical Almanac, and to give the Mean Right Ascensions and Declinations of the Stars, leaving any general results to be drawn on the completion of the whole. The principle has also been kept in view,—as the observations were mainly directed to improving the elements of the Solar system,—to consider the Edinburgh Observatory as supplementary to that of Greenwich, and intended to fill up, in the series of Greenwich Observations, those gaps which are so continually caused by bad weather occurring there, but not likely to prevail always in Edinburgh at the same times. To this end, for the sake of uniformity, BESSEL'S Refractions have been used, and the Declinations of the Standard Stars have been taken from the Greenwich Observations; but this slight innovation has, perhaps, hardly any sensible effect, as Professor HENDERSON'S Mural Circle Observations were essentially differential in character.

The Moon, and the Stars culminating near her, are meanwhile being closely observed, especially the Transits of the 2d Limb, as the Director of the Madras Observatory, and other persons, expressed themselves anxious for a greater number of such observations, in order to improve the determination of the longitudes of their respective stations.

C. PIAZZI SMYTH.

ROYAL OBSERVATORY, CALTON HILL,
December 1846.

INTRODUCTION.

The Royal Observatory of Edinburgh is situated on the Calton Hill, in the north-eastern quarter of the city, in Latitude 55° 57′ 23″·2 North, and Longitude $0^h\ 12^m\ 43^s{\cdot}0$ of time, or 3° 10′ 45″ of space, West of the meridian of Greenwich.

The upper surface of the square plinth of the base of the central column, bearing the Equatorial Telescope, is 349·16 feet above the mean level of the sea in the Frith of Forth at Leith.

The Observatory, and the principal instruments, viz., the Transit Instrument, Mural Circle, Equatorial Telescope, and Clock, are particularly described in the preceding volumes.

The objects chiefly observed with the Meridian Instruments during the year 1840 were the Sun, Moon, and Planets, the principal Stars for ascertaining the error and rate of the Clock, and the positions of the Instruments, the Moon-Culminating Stars, and Stars contained in the Catalogue of the Royal Astronomical Society.

The volume is divided into three parts, whereof the *first* contains the Transit Observations and the calculations of the Apparent Right Ascensions; the *second*, the Mural Circle Observations and the Apparent Declinations; and the *third*, the Catalogue of the Mean Right Ascensions of the Stars, and the comparison of the Planetary Observations with the Nautical Almanac. Each part is immediately followed with an account of the formulæ, constants, &c., employed in the respective calculations.

ERRATA, VOL. VI. 1840.

Page 43, *for* Nov. 15 *read* Nov. 16.

... 56, *for* $24^{s}{\cdot}23$ *read* $21^{s}{\cdot}23$ in the observation of the Mean Right Ascensions of α Herculis, on July 24.

OBSERVATIONS

MADE WITH

THE TRANSIT INSTRUMENT

IN THE YEAR 1840.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Jan. 2	ζ Pegasi	24·8	38·2	51·5	5·0	18·6	32 51·62	+ 0·12	+36·81	+36·86	22 33 28·60
	α Pegasi	42·9	56·4	10·3	23·8	37·8	56 10·24	+ 0·12	36·95	+36·92	22 56 47·28
	Uranus	11·8	25·2	38·6	52·1	5·5	58 38·64	+ 0·12	………	+36·93	22 59 15·69
Jan. 3	α Ceti	52·2	5·5	18·8	32·2	45·5	53 18·84	+ 0·11	37·46	+37·48	2 53 56·43
	η Tauri	53·8	8·3	22·9	37·4	51·8	37 22·84	+ 0·11	37·45	+37·49	3 38 0·44
	γ^1 Eridani	30·4	44·2	57·8	11·5	25·1	49 57·80	+ 0·08	37·54	+37·50	3 50 35·38
	α Tauri	41·0	54·8	8·7	22·5	36·3	26 8·66	+ 0·11	37·54	+37·51	4 26 46·28
	α Aurigæ	39·3	58·3	17·4	36·4	55·5	4 17·38	+ 0·10	37·50	+37·52	5 4 55·00
	δ Ursæ Minoris	……	9·5	53·0	37·0	20·5	22 53·42	− 1·25	37·22	+37·78	18 23 29·95
Jan. 4	α Cygni	41·7	0·5	19·2	37·8	56·5	35 19·14	+ 0·12	37·67	+37·82	20 35 57·08
	α Ursæ Minoris	56·5	12·0	25·0	40·0	55·0	1 25·70	− 3·09	33·80	+37·91	1 2 0·52
	α Ceti	51·6	4·9	18·3	31·6	45·0	53 18·28	+ 0·14	37·99	+37·94	2 53 56·36
	η Tauri	53·2	7·7	22·1	36·6	51·2	37 22·16	+ 0·14	38·09	+37·96	3 38 0·26
	γ^1 Eridani	30·0	43·7	57·4	11·2	24·8	49 57·42	+ 0·12	37·87	+37·96	3 50 35·50
	α Tauri	40·6	54·3	8·1	22·0	35·6	26 8·12	+ 0·14	38·04	+37·98	4 26 46·24
	δ Ursæ Minoris S.P.	23·5	7·0	50·5	34·0	16·5	22 50·30	+ 1·77	37·31	+38·01	6 23 30·08
Jan. 5	α Ophiuchi	23·6	37·2	50·7	4·6	18·2	26 50·86	+ 0·03	38·79	+38·70	17 27 29·59
	δ Ursæ Minoris	……	8·5	……	35·0	……	22 51·70	+ 0·29	37·39	+38·71	18 23 30·70
	α Lyræ	16·8	33·9	51·0	8·2	25·0	30 50·98	+ 0·07	38·73	+38·72	18 31 29·77
	β Lyræ	58·8	14·9	30·1	46·1	2·0	43 30·38	+ 0.07	38·58	+38·72	18 44 9·17
Jan. 6	Sun 1 Limb	15·2	29·5	44·0	58·6	12·9	4 44·04	− 0·06	………	+38·73	19 5 22·71
	Sun 2 Limb	36·4	50·8	5·2	20·0	34·3	7 5·34	− 0·06	………	+38·73	19 7 44·01
	γ Aquilæ	32·4	45·8	59·4	12·9	26·4	37 59·38	+ 0·02	38·76	+38·74	19 38 38·14
	α Aquilæ	52·0	5·4	18·7	32·2	45·6	42 18·78	+ 0·02	38·78	+38·74	19 42 57·54
	α Cygni	40·8	59·5	18·2	36·8	55·6	35 18·18	+ 0·08	38·67	+38·76	20 35 57·02
	ζ Cygni	57·3	12·5	27·6	43·0	58·4	5 27·76	+ 0·06	38·77	+38·77	21 6 6·59
	ι Pegasi	13·4	26·6	40·0	53·4	7·0	35 40·08	+ 0·02	38·83	+38·78	21 36 18·88
	α Ursæ Minoris	51·0	5·0	20·5	35·5	50·5	1 20·50	+ 0·49	33·85	+38·86	1 1 59·85
	Juno	17·0	30·6	43·9	57·2	10·6	39 43·86	− 0·01	………	+38·86	1 40 22·71
	δ Ursæ Minoris S.P.	25·5	8·5	52·0	35·5	17·5	22 51·80	− 0·05	37·63	+38·98	6 23 30·73
Jan. 7	α Ursæ Minoris	50·0	5·0	20·0	36·0	51·5	1 20·50	− 5·61	39·17	+39·39	1 1 54·28
	θ^1 Ceti	55·9	9·2	22·6	36·1	49·4	15 22·64	+ 0·24	39·35	+39·40	1 16 2·28
	η Tauri	51·8	6·1	20·8	35·2	49·7	37 20·72	+ 0·20	39·45	+39·45	3 38 0·37
	γ^1 Eridani	28·2	42·1	56·0	9·6	23·2	49 55·82	+ 0·23	39·34	+39·45	3 50 35·50
	α Tauri	38·9	52·7	6·6	20·4	34·2	26 6·56	+ 0·21	39·53	+39·46	4 26 46·23
	β Orionis	45·9	59·3	13·0	26·4	39·7	6 12·86	+ 0·23	39·60	+39·47	5 6 52·56
	δ Ursæ Minoris S.P.	20·5	4·0	47·0	31·5	13·5	22 47·30	+ 3·03	39·05	+39·48	6 23 29·81
	δ Ursæ Minoris	25·0	9·0	……	……	……	22 51·80	− 2·05	39·64	+39·64	18 23 29·39
Jan. 8	α Cygni	39·8	58·5	17·2	35·8	54·6	35 17·18	+ 0·11	39·62	+39·67	20 35 56·96
	ζ Cygni	56·0	11·4	26·7	42·1	57·4	5 26·72	+ 0·15	39·72	+39·68	21 6 6·55
Jan. 9	α Pegasi	39·4	53·1	6·7	20·6	34·2	56 6·80	+ 0·19	40·26	+40·26	22 56 47·25
Jan. 10	β Tauri	1·2	16·4	31·5	46·8	1·6	15 31·50	+ 0·09	41·20	+41·20	5 16 12·79
	α Lyræ	14·4	31·4	48·6	5·6	22·6	30 48·52	+ 0·02	41·30	+41·41	18 31 29·95
Jan. 11	Sun 1 Limb	……	18·0	32·0	46·8	0·8	26 32·22	− 0·01	………	+41·42	19 27 13·63
	Sun 2 Limb	24·4	38·8	……	……	……	28 53·12	− 0·01	………	+41·42	19 29 34·53
	α Cygni	38·0	56·8	15·4	34·2	52·8	35 15·44	+ 0·01	41·45	+41·44	20 35 56·89
	α Pegasi	38·2	52·0	5·6	19·3	33·1	56 5·64	+ 0·03	41·56	+41·49	22 56 47·16
	Moon 1 Limb	40·0	53·5	7·3	21·1	……	41 7·34	+ 0·02	………	+41·53	0 41 48·89
	α Ursæ Minoris	……	57·0	12·0	……	……	1 12·35	− 2·84	41·42	+41·54	1 1 51·05

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Jan. 12	α Ursæ Minoris	......	......	......	......	43·0	1 12·00	− 3·94	+42·08	+42·07	1 1 50·13
	θ¹ Ceti	53·1	6·7	20·1	33·6	47·1	15 20·12	+ 0·04	42·02	+42·07	1 16 2·23
	η Piscium	46·7	0·4	14·0	27·8	41·5	22 14·08	+ 0·04	....	+42·07	1 22 56·19
	Moon 1 Limb	22·4	36·4	50·6	4·5	18·7	33 50·52	+ 0·04	....	+42·08	1 34 32·64
	(*a*) Moon 2 Limb	40·0	54·2	8·0	22·2	36·2	36 8·12	+ 0·04	....	+42·08	1 36 50·24
	β Arietis	38·7	53·2	7·1	21·4	35·4	45 7·16	+ 0·04	....	+42·08	1 45 49·28
	α Arietis	59·7	14·0	28·5	42·9	57·2	57 28·46	+ 0·03	42·14	+42·09	1 58 10·58
Jan. 13	α Ophiuchi	19·7	33·6	47·2	0·8	14·4	26 47·14	− 0·04	42·76	+42·72	17 27 29·82
	Mercury 2 Limb	3·6	18·2	32·6	47·1	1·6	2 32·62	− 0·13	....	+42·73	18 3 15·22
	δ Ursæ Minoris	20·5	4·0	......	30·0	......	22 46·90	− 0·12	42·81	+42·74	18 23 29·52
	α Lyræ	13·2	30·2	47·2	4·3	21·4	30 47·26	− 0·02	42·64	+42·74	18 31 29·98
Jan. 14	ζ Cygni	53·4	8·6	23·7	39·0	54·3	5 23·80	− 0·03	42·81	+42·78	21 6 6·55
	ζ Pegasi	18·7	32·2	45·6	59·1	12·6	32 45·64	− 0·05	42·89	+42·80	22 33 28·39
	α Pegasi	37·0	50·6	4·4	18·2	31·8	56 4·40	− 0·04	42·85	+42·81	22 56 47·17
	α Ursæ Minoris	......	......	9·5	21·0	38·0	1 7·37	− 0·32	41·51	+42·85	1 1 49·90
	β Tauri	59·7	14·6	29·8	44·8	59·9	15 29·76	− 0·03	43·05	+42·95	5 16 12·68
	δ Orionis	42·2	55·6	9·2	22·6	36·0	23 9·12	− 0·07	42·67	+42·95	5 23 52·00
	δ Ursæ Minoris S.P.	19·0	......	47·0	30·0	13·5	22 46·50	+ 0·22	42·90	+42·98	6 23 29·70
Jan. 15	α Pegasi	36·6	50·2	3·8	17·5	31·2	56 3·86	− 0·03	43·38	+43·35	22 56 47·18
	α Ursæ Minoris	36·0	51·0	6·0	20·5	36·0	1 5·90	− 0·31	42·18	+43·39	1 1 48·98
	θ¹ Ceti	52·0	5·6	18·8	32·2	45·7	15 18·86	− 0·08	43·36	+43·40	1 16 2·18
	Moon 1 Limb	51·4	7·0	22·7	38·0	53·5	38 22·52	− 0·03	....	+43·45	4 39 5·94
	α Aurigæ	33·3	52·5	11·4	30·6	49·7	4 11·50	0·00	43·46	+43·46	5 4 54·96
	β Orionis	42·5	55·9	9·2	22·6	36·0	6 9·24	− 0·08	43·51	+43·46	5 6 52·62
	β Tauri	59·1	14·2	29·3	44·5	59·5	15 29·32	− 0·02	43·48	+43·46	5 16 12·76
	δ Ursæ Minoris S.P.	20·0	2·5	47·0	30·5	12·0	22 46·40	+ 0·23	43·04	+43·47	6 23 30·10
Jan. 16	Sun 1 Limb	37·3	51·8	6·2	20·5	34·7	48 6·10	− 0·07	....	+43·57	19 48 49·60
	Sun 2 Limb	57·3	11·5	26·0	40·2	54·6	50 25·92	− 0·07	....	+43·57	19 51 9·42
	α Aquarii	23·2	36·5	49·8	3·1	16·5	56 49·82	− 0·03	43·55	+43·59	21 57 33·38
	ζ Pegasi	18·3	31·6	45·0	58·5	11·8	32 45·04	− 0·02	43·46	+43·59	22 33 28·61
	α Ursæ Minoris	......	50·0	......	......	36·0	1 5·20	− 1·03	42·81	+43·61	1 1 47·78
	η Tauri	47·7	2·3	16·7	31·2	45·7	37 16·72	0·00	43·58	+43·64	3 38 0·36
	α Aurigæ	32·9	52·1	11·2	30·3	49·3	4 11·16	+ 0·01	43·78	+43·66	5 4 54·83
	β Tauri	58·9	13·9	29·0	44·1	59·3	15 29·04	0·00	43·73	+43·66	5 16 12·70
	26 Aurigæ	9·4	24·6	40·2	55·5	10·8	27 40·10	0·00	....	+43·66	5 28 23·76
	Moon 1 Limb	56·0	11·7	27·1	42·8	58·4	47 27·20	0·00	....	+43·67	5 48 10·87
	κ Aurigæ	58·7	14·1	29·3	44·6	59·8	4 29·30	0·00	....	+43·67	6 5 12 97
	δ Ursæ Minoris S.P.	20·0	3·0	......	......	......	22 46·25	+ 0·59	42·90	+43·68	6 23 30·52
	ε Geminorum	54·3	9·0	23·6	38·4	53·2	33 23·70	0·00	....	+43·68	6 34 7·38
	δ Ursæ Minoris	19·5	3·5	45·5	29·0	12·0	22 45·90	− 0·26	44·13	+43·83	18 23 29·47
Jan. 17	Sun 1 Limb	54·2	8·6	23·0	37·2	51·3	52 22·86	− 0·08	....	+43·85	19 53 6·63
	Sun 2 Limb	13·8	28·2	42·3	56·8	10·8	54 42·38	− 0·08	....	+43·85	19 55 26·15
	α Cygni	35·7	54·5	13·2	31·8	50·5	35 13·14	+ 0·01	43·76	+43·86	20 35 57·01
	ε Pegasi	8·3	21·5	35·1	48·7	2·0	35 35·12	− 0·02	43·82	+43·87	21 36 18·97
	α Pegasi	35·8	49·5	3·3	17·0	30·8	56 3·28	− 0·02	43·93	+43·89	22 56 47·15
	α Ursæ Minoris	39·5	51·5	4·5	19·0	35·0	1 5·90	− 0·67	40·97	+43·92	1 1 49·15
	Juno	41·6	55·2	8·5	21·9	35·3	54 8·50	− 0·05	....	+43·93	1 54 52·38
	β Tauri	58·6	13·8	29·0	44·1	59·1	15 28·92	0·00	43·85	+43·96	5 16 12·88
	κ Aurigæ	58·5	13·7	29·1	44·3	59·5	4 ·29·02	0·00	....	+43·97	6 5 12·99
	μ Geminorum	5·9	20·4	34·7	49·2	3·5	12 34·74	− 0·01	44·12	+43·97	6 13 18·70
	δ Ursæ Minoris S.P.	19·0	2·0	45·5	28·0	11·0	22 45·10	+ 0·42	44·28	+43·97	6 23 29·49
	ε Geminorum	53·8	8·4	23·0	38·0	52·4	33 23·12	− 0·01	....	+43·97	6 34 7·08
	Moon 1 Limb	36·0	51·2	6·4	22·0	37·2	56 6·56	− 0·01	....	+43·97	6 56 50·52

(*a*) Dark limb; very faint.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Jan. 17	δ Geminorum	23·1	37·5	51·7	6·1	20·5	9 51·78	− 0·01	+44·08	+43·98	7 10 35·75
	β Geminorum........	19·0	34·2	49·2	4·3	19·4	34 49·22	0·00	44·04	+43·98	7 35 33·20
Jan. 18		INSTRUMENT REVERSED.									
	α Aurigæ...............	32·3	51·4	10·5	29·5	48·6	4 10·46	+ 0·26	+ 44·22	+44·16	5 4 54·88
	β Tauri..................	58·2	13·4	28·5	43·6	58·8	15 28·50	+ 0·22	44·05	+44·16	5 16 12·88
	α Orionis...............	21·3	34·7	48·1	1·5	14·8	45 48·08	+ 0·21	44·15	+44·17	5 46 32·46
	δ Ursæ Minoris S.P.	......	5·0	......	30·0	13·0	22 47·23	− 1·56	44·21	+44·17	6 23 29·84
	δ Geminorum	22·8	37·1	51·5	5·8	20·2	9 51·48	+ 0·22	44·16	+44·18	7 10 35·88
	β Geminorum........	18·6	33·8	48·9	3·9	18·8	34 48·80	+ 0·22	44·25	+44·18	7 35 33·20
	(*a*) Moon 1 Limb	44·5	59·4	14·3	29·2	44·2	1 14·32	+ 0·23	....	+44·18	8 1 58·73
	Moon 2 Limb	12·1	26·9	42·0	56·8	11·8	3 41·92	+ 0·23	....	+44·18	8 4 26·33
	θ Cancri..................	17·6	31·5	45·7	59·7	13·7	21 45·64	+ 0·21	....	+44·18	8 22 30·03
	δ Cancri	24·7	38·6	52·6	6·8	20·8	34 52·70	+ 0·21	....	+44·18	8 35 37·09
Jan. 19	θ Cancri..................	17·5	31·5	45·4	59·4	13·5	21 45·46	+ 0·22	....	+44·31	8 22 29·99
	δ Cancri	24·4	38·4	52·5	6·6	20·6	34 52·50	+ 0·22	....	+44·31	8 35 37·03
	ε Hydræ..................	8·6	21·8	35·3	48·7	2·0	37 35·28	+ 0·21	44·37	+44·31	8 38 19·80
	Moon 2 Limb	......	16·3	31·2	46·0	......	3 31·17	+ 0·23	....	+44·31	9 4 15·71
	α Hydræ..............	34·0	47·3	0·7	14·2	27·4	19 0·72	+ 0·21	44·25	+44·32	9 19 45·25
	δ Ursæ Minoris.......	......	0·5	43·0	26·5	......	22 43·27	+ 1·82	44·92	+44·48	18 23 29·57
	α Lyræ..................	11·3	28·3	45·3	2·2	19·3	30 45·28	+ 0·26	44·45	+44·48	18 31 30·02
	Mercury 2 Limb......	13·2	27·7	42·2	56·6	11·1	36 42·16	+ 0·24	....	+44·48	18 37 26·88
	β Lyræ	52·7	8·6	24·5	40·2	56·2	43 24·44	+ 0·26	44·53	+44·48	18 44 9·18
	ζ Aquilæ	50·4	4·1	17·7	31·4	45·2	57 17·76	+ 0·23	44·54	+44·49	18 58 2·48
Jan. 20	Sun 1 Limb	40·3	54·8	8·8	23·0	37·2	5 8·82	+ 0·23	....	+44·51	20 5 53·56
	Sun 2 Limb	59·7	13·8	28·0	42·2	56·5	7 28·04	+ 0·23	....	+44·51	20 8 12·78
	ζ Cygni..................	51·2	6·5	21·7	37·0	52·4	5 21·76	+ 0·25	44·57	+44·52	21 6 6·53
	α Ursæ Minoris.......	......	41·0	55·5	11·0	26·0	0 55·62	+ 3·87	44·37	+44·56	1 1 44·05
	γ Ceti	50·5	3·7	17·0	30·4	43·7	34 17·06	+ 0·22	44·49	+44·58	2 35 1·86
	δ Ursæ Minoris	17·0	0·0	42·0	26·0	......	22 42·72	+ 2·14	45·26	+44·73	18 23 29·59
	α Lyræ..................	10·8	27·8	45·0	1·9	19·0	30 44·90	+ 0·26	44·84	+44·73	18 31 29·89
	β Lyræ	52·5	8·4	24·3	40·2	56·1	43 24·30	+ 0·25	44·69	+44·73	18 44 9·28
Jan. 21	Sun 1 Limb	......	8·7	22·9	37·1	51·3	9 22·91	+ 0·21	....	+44·75	20 10 7·87
	Sun 2 Limb	13·4	......	......	......	10·2	11 41·80	+ 0·21	....	+44·75	20 12 26·76
	α Arietis	57·3	11·4	25·6	39·8	54·4	57 25·70	+ 0·23	44·58	+44·80	1 58 10·73
	α Tauri	33·7	47·5	1·2	14·8	28·5	26 1·14	+ 0·22	44·86	+44·82	4 26 46·18
	α Aurigæ...............	31·8	50·8	9·9	28·9	48·0	4 9·88	+ 0·28	44·76	+44·83	5 4 54·99
	β Orionis...............	40·5	54·1	7·5	20·8	34·2	6 7·42	+ 0·21	45·02	+44·83	5 6 52·46
	β Tauri	57·4	12·5	27·5	43·0	58·0	15 27·68	+ 0·24	44·84	+44·84	5 16 12·75
	δ Ursæ Minoris S.P.	20·5	3·5	46·0	30·0	13·0	22 46·60	− 1·90	45·48	+44·84	6 23 29·54
Jan. 22	α Ursæ Minoris	25·5	36·5	53·0	8·5	......	0 53·62	+ 3·16	45·53	+44·99	1 1 41·77
	α Arietis	56·4	10·8	25·3	39·7	54·2	57 25·28	+ 0·27	44·95	+45·00	1 58 10·55
	Juno	54·6	7·8	21·0	34·3	47·7	1 21·08	+ 0·27	....	+45·00	2 2 6·35
	γ Ceti....................	50·0	3·4	16·6	30·0	43·3	34 16·66	+ 0·26	44·83	+45·00	2 35 1·92
	α Tauri..................	33·4	47·2	1·1	14·8	28·5	26 1·00	+ 0·27	44·94	+45·02	4 26 46·29
	α Aurigæ...............	31·3	50·2	9·3	28·4	47·7	4 9·38	+ 0·30	45·23	+45·02	5 4 54·70
	β Orionis...............	40·6	53·9	7·2	20·5	34·1	6 7·26	+ 0·28	45·10	+45·02	5 6 52·56
	δ Ursæ Minoris S.P.	20·0	3·0	46·5	29·5	11·5	22 46·10	− 1·16	45·35	+45·04	6 23 29·98
Jan. 24	α Ursæ Minoris.......	20·0	34·5	49·5	5·0	21·0	0 50·00	+ 5·32	45·45	+45·51	1 1 40·83
	θ¹ Ceti	49·5	2·8	16·4	29·7	43·3	15 16·34	+ 0·19	45·50	+45·51	1 16 2·04
	α Arietis	55·9	10·3	24·5	39·1	53·4	57 24·64	+ 0·22	45·61	+45·52	1 58 10·38

(*a*) Both Limbs enlightened.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Jan. 24	Juno	53·6	6·6	19·8	33·2	46·6	4 19·96	+ 0·19	………	+45·52	2 5 5·67
	γ Ceti	49·4	2·7	16·0	29·3	42·5	34 15·98	+ 0·19	+ 45·55	+45·52	2 35 1·69
	α Tauri	32·6	46·7	0·5	14·3	28·0	26 0·42	+ 0·21	45·56	+45·53	4 26 46·16
	α Aurigæ	31·1	50·2	9·1	28·2	47·2	4 9·16	+ 0·28	45·45	+45·53	5 4 54·97
Jan. 25	Sun 1 Limb	43·2	57·4	11·5	25·6	39·7	26 11·48	+ 0·24	………	+45·51	20 26 57·23
	Sun 2 Limb	1·4	15·3	29·6	43·6	57·8	28 29·54	+ 0·24	………	+45·51	20 29 15·29
	α Ursæ Minoris	17·5	32·5	49·0	6·0	21·5	0 49·30	+ 4·63	46·08	+45·50	1 1 39·43
	θ^1 Ceti	49·5	2·8	16·2	29·8	43·2	15 16·30	+ 0·24	45·48	+45·50	1 16 2·04
	α Arietis	55·9	10·5	24·8	39·0	53·5	57 24·74	+ 0·26	45·45	+45·50	1 58 10·50
	Juno	24·4	37·7	51·0	4·4	17·8	5 51·06	+ 0·24	………	+45·50	2 6 36·80
	α Tauri	32·8	46·7	0·5	14·5	28·1	26 0·52	+ 0·26	45·40	+45·50	4 26 46·28
	α Aurigæ	30·8	50·0	9·0	28·1	47·2	4 9·02	+ 0·31	45·55	+45·50	5 4 54·83
	β Orionis	40·0	53·4	6·8	20·2	33·6	6 6·80	+ 0·21	45·60	+45·50	5 6 52·51
	δ Ursæ Minoris S.P.	……	……	46·0	29·5	13·0	22 46·43	− 1·87	46·10	+45·50	6 23 30·06
Jan. 26	α Bootis	8·8	22·8	37·0	51·2	5·3	7 37·02	+ 0·32	45·42	+45·53	14 8 22·87
	λ Virginis	15·5	29·0	42·5	56·3	9·8	9 42·62	+ 0·33	………	+45·53	14 10 28·48
	ε Bootis	44·8	59·8	14·7	29·7	44·8	37 14·76	+ 0·32	45·50	+45·53	14 38 0·61
	Moon 2 Limb	25·6	40·2	54·8	9·5	24·2	40 54·86	+ 0·34	………	+45·53	14 41 40·73
	20 Libræ	28·4	43·0	57·8	12·4	27·0	53 57·72	+ 0·33	………	+45·53	14 54 43·58
	Jupiter 1 Limb	1·3	……	29·0	……	56·7	57 29·00	+ 0·33	………	+45·53	14 58 14·86
	Jupiter 2 Limb	……	17·6	……	45·4	……	57 31·50	+ 0·33	………	+45·53	14 58 17·36
Jan. 27	Sun 1 Limb	3·0	17·1	31·2	45·5	59·4	34 31·24	+ 0·33	………	+45·54	20 35 17·11
	Sun 2 Limb	20·7	34·7	48·8	2·8	17·0	36 48·80	+ 0·33	………	+45·54	29 37 34·67
	ζ Cygni	50·2	5·4	20·6	36·0	51·2	5 20·68	+ 0·32	45·61	+45·54	21 6 6·54
	α Pegasi	33·8	47·5	1·2	14·8	28·8	56 1·22	+ 0·32	45·61	+45·55	22 56 47·09
	ι Piscium	30·7	44·0	57·4	10·5	24·0	30 57·32	+ 0·32	45·50	+45·55	23 31 43·19
	α Ursæ Minoris	18·0	……	……	……	……	0 49·00	+ 3·21	46·28	+45·55	1 1 37·76
	α Arietis	55·8	10·2	24·6	38·9	53·5	57 24·60	+ 0·32	45·51	+45·56	1 58 10·48
	Juno	28·8	42·2	55·5	9·0	22·4	8 55·58	+ 0·32	………	+45·56	2 9 41·46
	β Orionis	39·8	53·2	6·6	20·0	33·5	6 6·62	+ 0·33	45·65	+45·57	5 6 52·52
	δ Ursæ Minoris S.P.	20·0	3·5	45·0	29·0	12·5	22 46·00	− 1·11	46·07	+45·58	6 23 30·47
Jan. 28	ζ Aquilæ	49·3	3·0	16·5	30·2	44·1	57 16·62	+ 0·34	45·73	+45·74	18 58 2·70
	δ Aquilæ	12·4	25·7	39·2	52·4	5·7	16 39·08	+ 0·34	45·79	+45·74	19 17 25·16
	α Cygni	33·6	52·3	11·0	29·5	48·3	35 10·94	+ 0·35	45·66	+45·74	20 35 57·03
Jan. 29	ζ Cygni	50·0	5·2	20·5	35·7	51·3	5 20·54	+ 0·34	45·74	+45·75	21 6 6·63
	ε Pegasi	5·8	19·4	32·7	46·3	59·8	35 32·80	+ 0·35	45·80	+45·75	21 36 18·90
	α Pegasi	33·7	47·4	1·2	14·8	28·5	56 1·12	+ 0·34	45·68	+45·76	22 56 47·22
	α Ursæ Minoris	18·0	34·0	48·5	3·5	19·5	0 48·70	+ 2·12	46·16	+45·80	1 1 36·62
	θ^1 Ceti	48·8	2·2	15·6	29·3	42·5	15 15·68	+ 0·36	45·93	+45.80	1 16 1·84
	α Arietis	55·6	9·9	24·4	38·7	53·2	57 24·36	+ 0·34	45·70	+45·81	1 58 10·51
	Juno	36·7	49·7	3·2	16·6	29·8	12 3·20	+ 0·35	………	+45·81	2 12 49·36
	δ Ursæ Minoris S.P.	20·0	3·0	45·5	28·5	11·5	22 45·70	− 0·58	46·14	+45·88	6 23 31·00
	α Cygni	33·2	51·9	10·6	29·3	47·8	35 10·56	+ 0·35	46·05	+46·10	20 35 57·01
Jan. 30	Sun 1 Limb	26·4	40·4	54·4	8·3	22·2	46 54·34	+ 0·40	………	+46·10	20 47 40·84
	Sun 2 Limb	43·3	57·5	11·5	25·4	39·5	49 11·44	+ 0·40	………	+46·10	20 49 57·94
	α Ursæ Minoris	17·0	33·5	48·0	4·5	20·0	0 48·60	+ 1·40	46·23	+46·16	1 1 36·16
	α Arietis	55·3	9·5	23·9	38·4	52·5	57 23·92	+ 0·35	46·11	+46·18	1 58 10·45
	γ Ceti	48·5	1·8	15·0	28·4	41·8	34 15·10	+ 0·36	46·19	+46·18	2 35 1·64
	α Tauri	31·9	45·7	59·4	13·4	27·4	25 59·56	+ 0·36	46·22	+46·19	4 26 46·11
	α Aurigæ	30·2	49·2	8·0	27·2	46·2	4 8·16	+ 0·35	46·31	+46·20	5 4 54·71
Jan. 31	Sun 1 Limb	32·6	46·7	0·6	14·5	28·7	51 0·62	+ 0·40	………	+46·29	20 51 47·31

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Jan. 31	Sun 2 Limb	49·4	3·3	17·3	31·4	45·4	53 17·36	+ 0·40	....	+46·29	20 54 4·05
	α Pegasi	33·1	46·6	0·4	14·1	27·9	56 0·42	+ 0·36	+ 46·35	+46·30	22 56 47·08
	ι Piscium	29·6	43·0	56·4	9·7	23·0	30 56·34	+ 0·36	46·42	+46·30	23 31 43·00
	α Ursæ Minoris	17·0	32·0	46·5	3·0	18·0	0 47·30	+ 1·03	47·16	+46·31	1 1 34·64
	α Arietis	54·8	9·4	23·8	38·2	52·5	57 23·74	+ 0·35	46·28	+46·32	1 58 10·41
	α Aurigæ	29·9	49·1	8·3	27·2	46·2	4 8·14	+ 0·34	46·33	+46·34	5 4 54·82
	β Orionis	39·1	52·5	6·0	19·4	32·7	6 5·94	+ 0·39	46·23	+46·34	5 6 52·67
	δ Ursæ Minoris S.P.	18·0	2·0	45·5	28·0	11·5	22 45·00	− 0·06	46·66	+46·35	6 23 31·29
	δ Ursæ Minoris	18·0	1·0	44·0	27·5	10·5	22 44·20	+ 0·62	46·86	+46·43	18 23 31·25
Feb. 3	γ Ceti	48·0	1·3	14·5	27·8	41·2	34 14·56	+ 0·25	46·79	+46·80	2 35 1·61
	α Ceti	42·4	55·7	9·2	22·4	35·8	53 9·10	+ 0·25	46·73	+46·80	2 53 56·15
	α Aurigæ	29·6	48·5	7·7	26·7	45·7	4 7·64	+ 0·29	46·83	+46·81	5 4 54·74
	β Orionis	38·4	51·8	5·4	19·8	32·2	6 5·52	+ 0·27	46·73	+46·81	5 6 52·60
	β Tauri	55·1	10·3	25·4	40·6	55·8	15 25·44	+ 0·26	46·95	+46·81	5 16 12·51
	δ Ursæ Minoris S.P.	20·0	3·5	46·0	29·5	12·5	22 46·30	− 1·17	46·99	+46·80	6 23 31·93
	⁎ D. + 10° 56′	26·6	40·2	53·6	7·1	20·6	16 53·62	+ 0·27	....	+46·80	7 17 40·69
Feb. 4	α Aurigæ	29·6	48·5	7·7	26·7	45·8	4 7·66	+ 0·31	46·77	+46·72	5 4 54·69
	α Orionis	18·4	31·8	45·3	58·7	12·2	45 45·28	+ 0·32	46·76	+46·72	5 46 32·32
	μ Geminorum	3·0	17·6	31·8	46·2	0·8	12 31·88	+ 0·31	46·62	+46·72	6 13 18·91
	δ Ursæ Minoris S.P.	19·5	3·0	46·0	29·0	12·5	22 46·00	− 0·26	46·58	+46·72	6 23 32·46
	α Canis Majoris	52·8	6·7	20·7	34·5	48·3	37 20·60	+ 0·35	46·72	+46·72	6 38 7·67
Feb. 5	β Lyræ	50·6	6·7	22·5	38·4	54·2	43 22·48	+ 0·24	46·85	+46·98	18 44 9·70
	ζ Aquilæ	48·2	2·0	15·7	29·3	43·0	57 15·64	+ 0·22	46·99	+46·98	18 58 2·84
	δ Aquilæ	11·7	25·0	38·2	51·5	4·8	16 38·24	+ 0·21	46·91	+46·98	19 17 25·43
	γ Aquilæ	24·4	37·7	51·4	4·9	18·4	37 51·36	+ 0·22	46·98	+46·98	19 38 38·56
	α Aquilæ	43·7	57·2	10·7	24·2	37·6	42 10·68	+ 0·22	47·08	+46·98	19 42 57·88
	α Cygni	32·4	51·2	9·7	28·4	47·3	35 9·80	+ 0·27	46·96	+46·99	20 35 57·06
Feb. 6	Sun 1 Limb	53·3	7·1	21·0	34·9	48·7	15 21·00	+ 0·21	....	+47·00	21 16 8·21
	Sun 2 Limb	8·7	22·6	36·5	50·3	4·2	17 36·46	+ 0·21	....	+47·00	21 18 23·67
	α Pegasi	32·4	46·2	59·7	13·5	27·4	55 59·84	+ 0·22	47·06	+47·01	22 56 47·07
	α Ursæ Minoris	9·0	......	......	......	......	0 39·80	+ 4·22	47·17	+47·01	1 1 31·03
	α Aurigæ	29·2	48·2	7·4	26·5	45·6	4 7·38	+ 0·27	47·06	+47·02	5 4 54·67
	β Orionis	38·4	51·7	5·3	18·5	32·0	6 5·18	+ 0·21	47·10	+47·02	5 6 52·41
	β Tauri	55·1	10·3	25·3	40·4	55·6	15 25·34	+ 0·23	47·05	+47·02	5 16 12·59
	δ Orionis	37·7	51·0	4·3	17·6	30·9	23 4·30	+ 0·21	47·07	+47·02	5 23 51·53
	α Cygni	32·4	51·0	9·7	28·4	47·3	35 9·76	+ 0·27	47·01	+47·03	20 35 57·06
Feb. 7	Sun 1 Limb	......	......	21·5	......	49·2	19 21·53	+ 0·22	....	+47·03	21 20 8·78
	Sun 2 Limb	9·1	23·2	36·8	50·7	4·5	21 36·86	+ 0·22	....	+47·03	21 22 24·11
	ω Piscium	51·5	4·8	18·2	31·6	45·0	50 18·22	+ 0·22	....	+47·04	23 51 5·48
	α Andromedæ	49·7	4·8	19·8	34·8	49·9	59 19·80	+ 0·23	47·14	+47·04	0 0 7·07
	γ Pegasi	45·0	58·8	12·5	26·2	40·0	4 12·50	+ 0·23	47·17	+47·04	0 4 59·77
	Moon 1 Limb	58·5	12·7	26·2	40·0	53·7	25 26·22	+ 0·23	....	+47·04	0 26 13·49
	58 Piscium	......	40·0	53·5	6·8	20·7	37 53·48	+ 0·23	....	+47·04	0 38 40·75
	α Ursæ Minoris	9·0	23·0	......	53·5	8·5	0 38·58	+ 3·85	48·06	+47·04	1 1 29·47
	β Orionis	38·5	51·8	5·2	18·5	32·0	6 5·20	+ 0·23	47·05	+47·03	5 6 52·46
	β Tauri	55·3	10·4	25·5	40·6	55·8	15 25·52	+ 0·23	46·86	+47·03	5 16 12·78
	δ Orionis	37·7	51·1	4·4	17·6	30·8	23 4·32	+ 0·23	47·02	+47·03	5 23 51·58
	δ Ursæ Minoris S.P.	21·5	......	46·0	29·0	13·0	22 46·62	− 1·55	47·89	+47·03	6 23 32·10
Feb. 8	Sun 1 Limb	53·8	7·7	21·6	35·3	49·1	23 21·50	+ 0·20	....	+46·98	21 24 8·68
	Sun 2 Limb	8·7	22·5	36·4	50·2	4·1	25 36·38	+ 0·20	....	+46·98	21 26 23·56
	γ Pegasi	45·1	59·0	12·6	26·4	40·1	4 12·64	+ 0·21	47·04	+46·97	0 4 59·82
	58 Piscium	26·7	40·2	53·6	7·2	20·8	37 53·70	+ 0·21	....	+46·97	0 38 40·88

Date.	Object Observed.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Feb. 8	ε Piscium	24·6	38·0	51·4	4·8	18·2	53 51·40	+ 0·20	·········	+46·97	0 54 38·57
	α Ursæ Minoris	7·5	······	39·0	······	······	0 38·45	+ 4·21	+ 47·14	+46·97	1 1 29·63
	Moon 1 Limb	1·8	15·7	29·7	43·6	57·6	17 29·68	+ 0·22	·········	+46·96	1 18 16·86
	π Piscium	23·4	37·0	50·4	4·0	17·5	27 50·46	+ 0·21	·········	+46·96	1 28 37·63
	β Arietis	33·5	47·5	1·6	15·7	30·1	45 1·68	+ 0·21	·········	+46·96	1 45 48·85
	α Arietis	54·2	8·5	23·0	37·4	51·7	57 22·96	+ 0·22	47·09	+46·96	1 58 10·14
	γ Ceti	47·7	1·1	14·4	27·7	41·1	34 14·40	+ 0·20	46·93	+46·96	2 35 1·56
	α Ceti	42·4	55·6	8·8	22·2	35·6	53 8·92	+ 0·19	46·90	+46·96	2 53 56·07
	μ Geminorum	2·7	17·4	31·8	46·2	0·5	12 31·72	+ 0·22	46·84	+46·97	6 13 18·91
Feb. 9	δ Aquilæ	11·4	24·7	38·1	51·4	4·7	16 38·06	+ 0·31	47·08	+47·12	19 17 25·49
	γ Aquilæ	24·3	37·7	51·2	4·7	18·2	37 51·22	+ 0·32	47·10	+47·12	19 38 38·66
	α Aquilæ	43·7	57·2	10·6	23·9	37·5	42 10·58	+ 0·32	47·15	+47·12	19 42 58·02
Feb. 10	Sun 1 Limb	50·7	4·5	18·3	32·1	46·0	31 18·32	+ 0·31	·········	+47·13	21 32 5·76
	Sun 2 Limb	5·1	19·0	32·8	46·5	0·4	33 32·76	+ 0·31	·········	+47·13	21 34 20·20
	α Ursæ Minoris	······	21·5	37·0	52·0	7·0	0 36·72	+ 4·32	47·40	+47·15	1 1 28·19
	θ^1 Ceti	47·4	0·7	14·3	27·8	41·3	15 14·30	+ 0·31	47·23	+47·15	1 16 1·76
	ν Arietis	29·4	43·3	57·5	11·4	25·7	28 57·46	+ 0·32	········	+47·17	2 29 44·95
	γ Ceti	47·5	0·8	14·2	27·4	40·4	34 14·06	+ 0·30	47·14	+47·17	2 35 1·53
	ε Arietis	49·2	3·3	17·6	31·8	46·1	49 17·60	+ 0·32	·········	+47·17	2 50 5·09
	α Ceti	42·0	55·3	8·5	21·8	35·2	53 8·56	+ 0·31	47·11	+47·17	2 53 56·04
	Moon 1 Limb	12·0	26·7	41·7	56·7	11·6	11 41·74	+ 0·34	·········	+47·17	3 12 29·25
	η Tauri	43·6	58·1	12·4	27·1	41·5	37 12·54	+ 0·33	47·11	+47·18	3 38 0·05
	37 Tauri	0·2	14·2	28·4	42·5	56·6	54 28·38	+ 0·32	·········	+47·18	3 55 15·88
	α Tauri	30·8	44·6	58·5	12·3	26·3	25 58·50	+ 0·32	47·18	+47·19	4 26 46·01
	δ Ursæ Minoris	18·0	1·0	44·5	27·5	11·0	22 44·40	+ 1·49	47·85	+47·35	18 23 33·24
Feb. 11	Sun 1 Limb	47·8	1·5	15·4	29·1	42·8	35 15·32	+ 0·25	·········	+47·38	21 36 2·95
	Sun 2 Limb	2·1	15·8	29·6	43·3	57·2	57 29·60	+ 0·25	·········	+47·38	21 38 17·23
	α Pegasi	31·8	45·7	59·5	13·2	27·0	55 59·44	+ 0·24	47·43	+47·40	22 56 47·08
	γ Pegasi	44·6	58·4	12·2	25·8	39·5	4 12·10	+ 0·24	47·53	+47·41	0 4 59·75
	α Ursæ Minoris	7·0	22·5	37·0	52·5	······	0 37·40	+ 3·13	47·24	+47·42	1 1 27·95
	γ^1 Eridani	20·0	33·7	47·5	1·2	14·8	49 47·44	+ 0·25	47·28	+47·46	3 50 35·15
	Moon 1 Limb	28·0	43·7	59·2	14·4	29·7	14 59·00	+ 0·26	·········	+47·46	4 15 46·72
	α Tauri	30·5	44·5	······	······	······	25 58·25	+ 0·24	47·50	+47·47	4 26 45·96
	μ Geminorum	2·1	16·7	31·1	45·5	59·8	12 31·04	+ 0·24	47·48	+47·49	6 13 18·77
	α Cygni	31·8	50·5	9·3	28·0	46·6	35 9·24	+ 0·18	·········	+47·71	20 35 57·13
Feb. 12	Sun 1 Limb	······	57·8	11·2	25·2	39·2	39 11·49	+ 0·12	·········	+47·73	21 39 59·34
	Sun 2 Limb	58·0	11·8	25·5	39·4	53·0	41 25·54	+ 0·12	·········	+47·73	21 42 13·39
	γ Pegasi	44·4	58·3	12·1	25·7	39·4	4 11·98	+ 0·13	47·76	+47·76	0 4 59·87
	α Ursæ Minoris	4·5	19·5	······	50·0	6·0	0 35·08	+ 4·13	47·91	+47·78	1 1 26·99
	α Tauri	30·5	44·3	58·2	12·2	25·8	25 58·20	+ 0·13	47·64	+47·82	4 26 46·15
	ι Aurigæ	17·0	32·8	48·6	4·5	20·4	45 48·66	+ 0·15	·········	+47·83	4 46 36·64
	ι Tauri	17·4	31·6	46·1	0·3	14·5	52 45·98	+ 0·13	·········	+47·83	4 53 33·94
	α Aurigæ	28·1	47·2	6·4	25·6	44·7	4 6·40	+ 0·18	48·02	+47·83	5 4 54·41
	β Orionis	37·5	51·0	4·4	17·8	31·5	6 4·44	+ 0·12	47·85	+47·83	5 6 52·39
	β Tauri	54·4	9·5	24·6	39·6	54·8	15 24·58	+ 0·14	47·82	+47·83	5 16 12·55
	Moon 1 Limb	50·3	5·8	21·4	37·1	52·7	21 21·46	+ 0·15	·········	+47·83	5 22 9·44
	136 Tauri	······	15·3	30·0	······	0·4	42 30·24	+ 0·14	·········	+47·83	5 43 18·21
	κ Aurigæ	54·5	9·8	25·1	······	······	4 25·06	+ 0·14	·········	+47·84	6 5 13·04
Feb. 13	Sun 1 Limb	40·0	53·7	7·6	21·0	34·6	43 7·38	+ 0·08	·········	+47·95	21 43 55·41
	Sun 2 Limb	53·6	7·4	21·1	34·6	48·4	45 21·02	+ 0·08	·········	+47·95	21 46 9·05
	γ^1 Eridani	19·6	33·3	47·0	0·7	14·4	49 47·00	+ 0·07	47·87	+48·00	3 50 35·07
	α Aurigæ	28·2	47·2	6·4	25·5	44·5	4 6·36	+ 0·17	48·05	+48·01	5 4 54·54
	β Orionis	37·5	50·8	4·4	17·6	31·2	6 4·30	+ 0·08	48·02	+48·01	5 6 52·39

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Feb. 13	β Tauri	54·3	9·2	24·5	39·5	54·7	15 24·44	+ 0·12	+47·97	+48·01	5 16 12·57
	136 Tauri	59·8	15·1	29·9	45·1	0·3	42 30·04	+ 0·11	………	+48·01	5 43 18·16
	α Orionis	17·3	30·6	44·1	57·5	10·8	45 44·06	+ 0·09	48·12	+48·01	5 46 32·16
	ϰ Aurigæ	54·2	9·3	24·5	40·0	55·3	4 24·66	+ 0·12	………	+48·01	6 5 12·79
	δ Ursæ Minoris S.P.	22·0	5·0	49·0	32·0	15·0	22 48·60	− 2·36	48·10	+48·01	6 23 34·25
	Moon 1 Limb	54·3	9·7	25·2	40·8	56·2	28 25·24	+ 0·12	………	+48·01	6 29 13·37
	τ Geminorum	40·3	55·7	11·1	26·5	41·9	0 11·10	+ 0·12	………	+48·01	7 0 59·23
	δ Geminorum	19·0	33·4	47·7	2·1	16·4	9 47·72	+ 0·11	48·05	+48·01	7 10 35·84
	∗ D. + 10° 56′	25·4	38·6	52·2	5·8	19·4	16 52·28	+ 0·10	………	+48·01	7 17 40·39
Feb. 14	Sun 1 Limb	34·8	……	2·2	15·8	29·4	47 2·13	+ 0·10	………	+48·02	21 47 50·25
	Sun 2 Limb	48·1	1·8	15·4	29·2	42·8	49 15·46	+ 0·10	………	+48·02	21 50 3·58
	α Geminorum follow.	……	21·3	36·9	52·7	8·5	23 37·00	+ 0·14	48·16	+48·03	7 24 25·17
	α Canis Minoris	……	……	9·2	……	35·8	30 9·15	+ 0·10	48·03	+48·03	7 30 57·28
	Moon 1 Limb	53·6	8·6	23·5	38·8	53·8	33 23·66	+ 0·13	………	+48·03	7 34 11·82
	β Geminorum	……	……	45·3	0·5	15·5	34 45·33	+ 0·13	47·89	+48·03	7 35 33·49
	θ Cancri	14·0	27·9	42·0	56·0	10·1	21 42·00	+ 0·11	………	+48·04	8 22 30·15
Feb. 15	γ Pegasi	44·0	57·6	11·4	25·1	38·6	4 11·34	+ 0·13	48·39	+48·15	0 4 59·62
	α Ursæ Minoris	2·0	16·5	……	47·0	2·5	0 32·05	+ 4·50	48·66	+48·16	1 1 24·71
	α Orionis	17·2	30·6	43·9	57·2	10·7	45 43·92	+ 0·13	48·20	+48·19	5 46 32·24
	μ Geminorum	1·5	16·0	30·4	44·7	59·1	12 30·34	+ 0·14	48·23	+48·20	6 13 18·68
	δ Ursæ Minoris S.P.	22·0	5·0	48·5	30·5	13·5	22 47·90	− 1·98	48·93	+48·20	6 23 34·12
	δ Geminorum	18·7	33·4	47·7	2·0	16·4	9 47·64	+ 0·14	48·08	+48·21	7 10 35·99
	∗ D. + 10° 56′	24·2	38·6	52·1	5·7	19·2	16 51·96	+ 0·13	………	+48·21	7 17 40·30
	α Geminorum preced.	……	20·8	……	52·2	……	23 36·50	+ 0·16	………	+48·21	7 24 24·87
	α Geminorum follow.	5·5	……	37·0	……	8·4	23 36·97	+ 0·16	48·16	+48·21	7 24 25·34
	β Geminorum	14·7	29·9	45·2	0·3	15·4	34 45·10	+ 0·15	48·10	+48·21	7 35 33·46
Feb. 18	Sun 1 Limb	6·5	20·1	33·7	47·4	0·9	2 33·72	+ 0·26	………	+49·04	22 3 23·02
	Sun 2 Limb	19·2	32·7	46·4	0·0	13·5	4 46·36	+ 0·26	………	+49·04	22 5 35·66
	δ Ursæ Minoris S.P.	22·0	5·0	48·0	30·5	13·5	22 47·80	− 1·00	48·84	+49·15	6 23 35·95
Feb. 20		INSTRUMENT REVERSED.									
	δ Ursæ Minoris S.P.	21·0	……	47·5	31·5	14·5	22 47·82	− 1·57	49·93	+49·78	6 23 36·03
	δ Geminorum	……	31·7	46·1	0·4	14·7	9 46·05	− 0·09	49·87	+49·79	7 10 35·75
	α Geminorum preced.	……	19·6	……	50·8	……	23 35·20	− 0·06	………	+49·79	7 24 24·93
	α Geminorum follow.	4·4	……	35·6	……	6·8	23 35·60	− 0·06	49·72	+49·79	7 24 25·33
	α Canis Minoris	40·7	54·4	7·7	……	……	30 7·61	− 0·14	49·78	+49·79	7 30 57·26
Feb. 22	ε Leonis	28·7	43·8	57·8	12·7	27·1	35 58·02	+ 0·23	49·78	+49·74	9 36 47·99
	α Leonis	35·8	49·4	3·1	16·6	30·3	59 3·04	+ 0·25	49·71	+49·74	9 59 53·03
Feb. 23	β Lyræ	48·4	4·2	20·1	35·9	51·7	43 20·06	+ 0·24	49·74	+49·78	18 44 10·08
	ζ Aquilæ	45·8	59·6	13·2	26·8	40·6	57 13·20	+ 0·28	49·80	+49·78	18 58 3·26
	δ Aquilæ	9·1	22·4	35·6	49·0	2·3	16 35·68	+ 0·30	49·80	+49·78	19 17 25·76
	γ Aquilæ	22·0	35·5	48·9	2·5	16·0	37 48·98	+ 0·29	49·66	+49·78	19 38 39·05
	α Aquilæ	41·5	54·9	8·3	21·7	35·3	42 8·34	+ 0·29	49·71	+49·78	19 42 58·41
Feb. 24	Sun 2 Limb	……	28·3	……	55·8	……	27 42·05	+ 0·31	………	+49·79	22 28 32·15
	α Arietis	51·2	5·6	20·0	34·3	48·7	57 19·96	+ 0·27	49·82	+49·80	1 58 10·03
	γ^1 Eridani	17·2	31·0	44·6	58·2	12·1	49 44·62	+ 0·31	49·83	+49·82	3 50 34·75
	μ Geminorum	59·7	14·1	28·4	42·8	57·2	12 28·44	+ 0·27	49·89	+49·85	6 13 18·56
	δ Ursæ Minoris S.P.	18·0	1·5	44·0	28·0	9·5	22 44·20	+ 3·25	49·88	+49·85	6 23 37·30
	α Canis Majoris	49·6	3·4	17·2	31·1	44·8	37 17·22	+ 0·32	49·91	+49·85	6 38 7·39
	δ Geminorum	17·0	31·3	45·6	0·1	14·5	9 45·70	+ 0·26	49·83	+49·86	7 10 35·82

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Feb. 24	⁎ D. + 10° 56′	23·4	36·7	50·3	3·8	17·5	16 50·34	+ 0·29	………	+49·86	7 17 40·49
	α Geminorum preced.	3·4	……	34·8	……	6·2	23 34·80	+ 0·23	………	+49·86	7 24 24·89
	α Geminorum follow.	……	19·6	……	51·0	……	23 35·30	+ 0·23	+49·69	+49·86	7 24 25·39
Feb. 25	Sun 1 Limb	51·0	4·4	18·0	31·6	45·1	29 18·02	+ 0·28	………	+50·03	22 30 8·33
	Sun 2 Limb	2·4	15·8	29·3	42·8	56·3	31 29·32	+ 0·28	………	+50·03	22 32 19·63
	α Ursæ Minoris	5·0	21·0	33·5	49·5	……	0 34·78	− 5·21	49·91	+50·05	1 1 19·62
	α Tauri	27·7	41·6	55·4	9·3	23·0	25 55·40	+ 0·26	50·11	+50·09	4 26 45·75
	α Aurigæ	25·9	44·9	4·0	22·9	42·2	4 3·98	+ 0·19	50·16	+50·10	5 4 54·27
	β Tauri	51·9	6·9	22·1	37·1	52·3	15 22·06	+ 0·24	50·05	+50·10	5 16 12·40
	δ Ursæ Minoris S.P.	19·0	2·0	44·0	27·0	10·5	22 44·50	+ 2·89	50·24	+50·11	6 23 37·50
	α Canis Majoris	49·3	3·3	17·1	30·9	44·8	37 17·08	+ 0·29	50·07	+50·12	6 38 7·49
	⁎ D. + 11° 20′	34·6	48·1	1·6	15·2	28·6	17 1·62	+ 0·27	………	+50·13	7 17 52·02
	δ Ophiuchi	41·6	55·1	8·4	21·7	35·1	5 8·38	+ 0·31	50·29	+50·25	16 5 58·94
	σ Scorpii	9·6	23·9	39·0	53·5	8·2	10 38·84	+ 0·33	………	+50·25	16 11 29·42
	α Scorpii	17·3	32·0	46·8	1·5	16·4	18 46·80	+ 0·33	50·31	+50·25	16 19 37·38
	δ Ursæ Minoris	23·5	7·5	49·5	33·0	17·0	22 50·10	− 2.44	50·12	+50·28	18 23 37·94
Feb. 26	Sun 1 Limb	37·6	51·2	4·7	18·1	31·4	33 4·60	+ 0·32	………	+50·34	22 33 55·26
	Sun 2 Limb	49·1	2·3	15·7	29·4	42·7	35 15·84	+ 0·32	………	+50·34	22 36 6·50
	α Pegasi	29·0	42·8	56·6	10·4	23·9	55 56·54	+ 0·29	50·32	+50·35	22 56 47·18
	α Andromedæ	46·5	1·5	16·5	31·6	46·7	59 16·56	+ 0·26	50·24	+50·36	0 0 7·18
	α Ursæ Minoris	6·0	22·0	36·5	52·0	7·0	0 36·70	− 5·92	48·18	+50·37	1 1 21·15
	α Aurigæ	25·4	44·6	3·6	22·7	41·8	4 3·62	+ 0·19	50·50	+50·41	5 4 54·22
	β Orionis	34·6	48·1	1·6	14·8	28·2	6 1·46	+ 0·32	50·42	+50·41	5 6 52·19
	δ Ursæ Minoris S.P.	18·0	2·5	44·5	27·0	10·5	22 44·50	+ 3·26	50·17	+50·42	6 23 38·18
	α Canis Majoris	49·0	2·8	16·7	30·6	44·3	37 16·68	+ 0·33	50·42	+50·43	6 38 7·44
	⁎ D. + 11° 20′	34·1	47·7	1·3	14·7	28·3	17 1·22	+ 0·30	………	+50·43	7 17 51·95
	36 Ophiuchi follow.	11·8	26·5	41·3	55·9	10·7	4 41·24	+ 0·24	………	+50·53	17 5 32·01
	α Herculis	3·6	17·4	31·2	44·7	58·6	6 31·10	+ 0·23	50·50	+50·53	17 7 21·86
	θ Ophiuchi	52·2	6·8	21·5	35·9	50·5	11 21·38	+ 0·24	………	+50·53	17 12 12·15
	α Ophiuchi	13·2	26·7	40·5	53·8	7·4	26 40·32	+ 0·23	50·51	+50·54	17 27 31·09
	Moon 2 Limb	6·2	21·8	37·5	53·2	8·8	52 37·50	+ 0·25	………	+50·54	17 53 28·29
	δ Ursæ Minoris	24·0	6·5	50·5	32·5	……	22 49·85	− 1·67	49·90	+50·55	18 23 38·73
	α Lyræ	6·4	23·4	40·5	57·5	14·5	30 40·46	− 0·19	50·69	+50·55	18 31 30·82
Feb. 27	Sun 1 Limb	23·7	37·3	50·9	4·4	17·8	36 50·82	+ 0·24	………	+50·59	22 37 41·65
	Sun 2 Limb	34·7	48·4	1·8	15·2	28·6	39 1·74	+ 0·24	………	+50·59	22 39 52·57
	α Andromedæ	46·2	1·3	16·3	31·4	46·5	59 16·34	+ 0·22	50·50	+50·60	0 0 7·16
	γ Pegasi	41·5	55·2	9·0	22·8	36·4	4 8·98	+ 0·23	50·61	+50·60	0 4 59·81
	α Ursæ Minoris	5·0	20·5	36·0	50·0	5·0	0 35·30	− 4·13	48·95	+50·61	1 1 21·78
	α Arietis	50·3	4·6	19·1	33·6	48·0	57 19·12	+ 0·23	50·67	+50·62	1 58 9·97
	δ Ursæ Minoris S.P.	18·5	2·0	46·5	30·0	12·5	22 45·90	+ 2·35	49·99	+50·66	6 23 38·91
	α Canis Majoris	48·8	2·7	16·5	30·3	44·2	37 16·50	+ 0·25	50·66	+50·66	6 38 7·41
	α Canis Minoris	39·6	53·1	6·4	19·6	32·8	30 6·30	+ 0·24	50·65	+50·67	7 30 57·21
Feb. 29	α Ursæ Minoris	……	……	35·5	48·5	……	0 34·55	− 7·07	50·03	+51·05	1 1 18·53
	α Aurigæ	24·7	43·9	3·0	22·2	41·2	4 3·00	+ 0·13	51·11	+51·08	5 4 54·21
	β Orionis	33·8	47·4	0·7	14·2	27·5	6 0·72	+ 0·29	51·14	+51·08	5 6 52·09
	β Tauri	50·8	5·9	21·1	36·1	51·2	15 21·02	+ 0·21	51·05	+51·08	5 16 12·31
	δ Ursæ Minoris S.P.	19·0	2·0	45·0	29·0	11·0	22 45·20	+ 3·73	49·93	+51·09	6 23 40·02
	α Canis Majoris	48·1	2·1	16·0	29·9	43·8	37 15·98	+ 0·31	51·09	+51·09	6 38 7·38
	δ Geminorum	15·6	30·1	44·4	58·9	13·2	9 44·44	+ 0·23	51·06	+51·09	7 10 35·76
	⁎ D. + 11° 20′	33·4	47·0	0·6	14·2	27·6	17 0·56	+ 0·26	………	+51·09	7 17 51·91
Mar. 1	δ Aquilæ	7·8	21·2	34·5	47·7	1·1	16 34·46	+ 0·33	51·16	+51·22	19 17 26·01
	γ Aquilæ	20·4	34·1	47·4	1·1	14·7	37 47·54	+ 0·32	51·24	+51·22	19 38 39·08
	α Aquilæ	40·2	53·6	7·0	20·4	33·8	42 7·00	+ 0·32	51·18	+51·22	19 42 58·54

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Mar. 1	α Cygni	28·7	47·3	6·4	24·7	43·5	35 6·12	+ 0·20	+51·13	+51·22	20 35 57·54
Mar. 2	Sun 1 Limb	23·2	36·7	50·3	3·7	17·1	51 50·20	+ 0·34	....	+51·23	22 52 41·77
	Sun 2 Limb	33·7	47·2	0·5	14·0	27·5	54 0·58	+ 0·34	....	+51·23	22 54 52·15
	Mercury 1 Limb	7·4	20·5	34·0	47·4	0·7	18 34·00	+ 0·34	....	+51·23	23 19 25·57
	α Andromedæ	45·6	0·5	15·5	30·7	45·6	59 15·58	+ 0·27	51·20	+51·24	0 0 7·09
	α Ursæ Minoris	1·5	17·0	31·5	47·0	2·5	0 31·90	− 6·64	51·34	+51·24	1 1 16·50
	α Arietis	49·6	4·1	18·5	32·8	47·3	57 18·46	+ 0·29	51·22	+51·25	1 58 10·00
	∗ D. + 11° 20′	33·2	46·6	0·1	13·7	27·4	17 0·20	+ 0·31	....	+51·29	7 17 51·80
	α Geminorum preced.	......	17·5	......	48·8	......	23 33·15	+ 0·25	....	+51·30	7 24 24·70
	α Geminorum follow.	2·2	......	33·6	......	5·0	23 33·60	+ 0·25	51·29	+51·30	7 24 25·15
	α Canis Minoris	38·8	52·1	5·4	18·8	32·1	30 5·44	+ 0·32	51·39	+51·30	7 30 57·06
	β Geminorum	11·4	26·6	41·6	56·7	11·7	34 41·60	+ 0·27	51·34	+51·30	7 35 33·17
Mar. 3	α Leonis	34·0	47·4	1·1	14·6	28·4	59 1·10	+ 0·30	51·63	+51·52	9 59 52·92
	γ Aquilæ	20·4	33·8	47·4	0·8	14·4	37 47·36	+ 0·31	51·48	+51·62	19 38 39·29
	α Aquilæ	39·8	53·3	6·7	20·1	33·6	42 6·70	+ 0·32	51·53	+51·62	19 42 58·64
	β Aquilæ	8·6	21·9	35·2	48·6	1·9	46 35·24	+ 0·32	51·66	+51·62	19 47 27·18
Mar. 4	Sun 1 Limb	50·0	3·6	16·9	30·2	43·6	59 16·86	+ 0·34	....	+51·67	23 0 8·87
	Sun 2 Limb	0·2	13·6	27·0	40·4	53·9	1 27·02	+ 0·34	....	+51·67	23 2 19·03
	Mercury 1 Limb	57·9	11·4	24·7	38·0	......	32 24·69	+ 0·33	....	+51·67	23 33 16·69
	α Andromedæ	44·9	0·1	15·0	30·2	45·4	59 15·12	+ 0·26	51·67	+51·68	0 0 7·06
	α Arietis	49·3	3·5	17·8	32·2	46·7	57 17·90	+ 0·29	51·76	+51·71	1 58 9·90
	α Aurigæ	24·0	43·1	2·1	21·2	40·3	4 2·14	+ 0·18	51·83	+51·75	5 4 54·07
	β Orionis	33·2	46·5	0·0	13·4	26·8	5 59·98	+ 0·34	51·76	+51·75	5 6 52·07
	δ Ursæ Minoris S.P.	18·5	1·5	45·0	27·5	11·0	22 44·70	+ 3·78	51·66	+51·76	6 23 40·24
	α Canis Majoris	47·6	1·4	15·3	29·2	43·0	37 15·30	+ 0·36	51·66	+51·76	6 38 7·42
Mar. 5	Sun 2 Limb	42·7	56·2	9·5	22·8	36·3	5 9·50	+ 0·30	....	+51·91	23 6 1·71
	Mercury 1 Limb	......	3·4	16·7	29·9	43·2	39 16·62	+ 0·29	....	+51·92	23 40 8·83
	α Andromedæ	44·8	59·8	15·0	29·8	45·1	59 14·90	+ 0·25	51·90	+51·92	0 0 7·07
	α Ursæ Minoris	59·0	13·5	29·0	43·0	57·0	0 28·30	− 5·19	52·23	+51·93	1 1 15·04
	α Arietis	48·8	3·4	17·8	32·3	46·6	57 17·78	+ 0·27	51·89	+51·94	1 58 9·99
	α Ceti	36·7	50·2	3·5	16·7	30·0	53 3·42	+ 0·29	51·95	+51·95	2 53 55·66
	β Tauri	49·8	4·8	19·9	35·0	50·1	15 19·92	+ 0·25	52·02	+51·97	5 16 12·14
	δ Ursæ Minoris S.P.	19·0	2·0	46·0	28·5	11·5	22 45·40	+ 2·90	52·18	+51·98	6 23 40·28
	α Canis Majoris	47·2	1·2	15·0	28·8	42·8	37 15·00	+ 0·30	52·00	+51·98	6 38 7·28
Mar. 6	Sun 1 Limb	14·7	28·2	41·6	55·1	8·5	6 41·62	+ 0·28	....	+52·12	23 7 34·02
	Sun 2 Limb	24·8	38·3	51·7	5·0	18·3	8 51·62	+ 0·28	....	+52·12	23 9 44·02
	Mercury 1 Limb	38·5	51·8	5·2	18·5	31·7	46 5·14	+ 0·28	....	+52·13	23 46 57·55
	α Andromedæ	44·8	59·7	14·7	29·7	45·0	59 14·78	+ 0·21	52·06	+52·13	0 0 7·12
	(a) Moon 1 Limb	2·0	15·9	29·7	43·6	57·4	58 29·72	+ 0·27	....	+52·14	0 59 22·13
	α Ursæ Minoris	59·5	14·0	28·5	44·0	59·0	0 29·00	− 6·33	52·27	+52·14	1 1 14·81
	α Arietis	48·8	3·4	17·6	31·8	46·4	57 17·60	+ 0·24	52·10	+52·14	1 58 9·98
	α Aurigæ	23·7	42·7	1·8	20·7	39·8	4 1·74	+ 0·14	52·22	+52·17	5 4 54·05
	β Orionis	32·7	46·2	59·6	13·0	26·4	5 59·58	+ 0·28	52·19	+52·17	5 6 52·03
	δ Ursæ Minoris S.P.	20·0	2·5	45·0	28·0	11·5	22 45·40	+ 3·39	52·01	+52·19	6 23 40·98
	α Canis Majoris	47·0	1·1	14·8	28·5	42·4	37 14·76	+ 0·29	52·24	+52·19	6 38 7·24
Mar. 7	Sun 1 Limb	57·0	10·2	23·8	37·1	50·4	10 23·70	+ 0·18	....	+52·37	23 11 16·25
	Sun 2 Limb	6·6	19·8	33·4	46·8	0·1	12 33·34	+ 0·18	....	+52·37	23 13 25·89
	Mercury 1 Limb	......	......	49·4	2.8	16·1	52 49·42	+ 0·18	....	+52·38	23 53 41·98
	α Ursæ Minoris	......	13·0	......	44·0	......	0 28·35	− 4·56	50·77	+52·39	1 1 16·18
	α Aurigæ	23·6	42·6	1·7	20·8	39·8	4 1·70	+ 0·11	52·27	+52·44	5 4 54·25
	β Orionis	32·7	46·2	59·4	12·8	26·3	5 59·48	+ 0·18	52·37	+52·44	5 6 52·10
	δ Ursæ Minoris S.P.	21·5	5·0	48·5	30·5	14·5	22 48·00	+ 2·46	50·68	+52·45	6 23 42·91

(a) Very faint.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Mar. 7	δ Geminorum ········	14·2	28·4	42·8	57·3	11·6	9 42·86	+ 0·16	+52·62	+52·45	7 10 35·47
	α Geminorum follow.	0·8	16·7	32·5	48·2	3·8	23 32·40	+ 0·14	52·53	+52·45	7 24 24·99
Mar. 8	α Ursæ Minoris······	······	15·0	28·5	41·5	58·0	0 28·35	− 6·37	52·21	+52·49	1 1 14·47
	α Arietis · ············	······	······	17·5	31·8	46·2	57 17·44	+ 0·19	52·29	+52·49	1 58 10·12
	Moon 1 Limb········	17·2	31·9	46·7	1·4	15·9	52 46·62	+ 0·20	·········	+52·49	2 53 39·31
	η Tauri·················	37·8	52·4	6·8	21·3	35·7	37 6·80	+ 0·19	52·56	+52·49	3 37 59·48
	α Tauri·················	25·1	39·0	52·7	6·5	20·5	25 52·76	+ 0·20	52·62	+52·50	4 26 45·46
Mar. 9	Sun 1 Limb···········	19·2	32·6	46·0	59·3	12·8	17 45·98	+ 0·21	·········	+52·74	23 18 38·93
	Sun 2 Limb···········	28·6	42·2	55·6	9·0	22·4	19 55·56	+ 0·21	·········	+52·74	23 20 48·51
	α Andromedæ········	43·8	59·2	14·1	29·3	44·5	59 14·18	+ 0·15	52·73	+52·75	0 0 7·08
	Mercury 1 Limb······	34·2	47·5	0·8	14·2	27·5	6 0·84	+ 0·21	·········	+52·75	0 6 53·80
	α Ursæ Minoris ······	59·0	12·5	28·5	42·5	58·0	0 28·10	− 6·39	52·12	+52·76	1 1 14·47
	α Arietis ··············	48·2	2·5	17·0	31·4	45·8	57 16·98	+ 0·17	52·76	+52·77	1 58 9·92
	η Tauri ················	37·6	52·2	6·6	21·0	35·5	37 6·58	+ 0·17	52·78	+52·79	3 37 59·54
	Moon 1 Limb ········	2·1	17·3	32·4	47·6	2·8	55 32·44	+ 0·16	·········	+52·80	3 56 25·40
	υ^1 Tauri ···············	23·4	37·8	52·3	6·6	21·0	15 52·22	+ 0·17	·········	+52·80	4 16 45·19
	α Tauri ················	24·9	38·7	52·5	6·4	20·3	25 52·56	+ 0·18	52·82	+52·81	4 26 45·55
	τ Tauri·················	18·1	32·4	46·8	1·2	15·6	31 46·82	+ 0·17	·········	+52·81	4 32 39·80
	δ Ursæ Minoris S.P.	20·5	3·0	47·0	29·5	12·0	22 46·40	+ 3·33	52·08	+52·84	6 23 42·57
	α Canis Majoris ······	46·5	0·2	14·1	27·9	42·0	37 14·14	+ 0·23	52·86	+52·84	6 38 7·21
Mar. 10	Moon 1 Limb·········	42·6	57·9	13·4	29·0	44·5	1 13·48	+ 0·12	·········	+53·21	5 2 6·81
	α Aurigæ···············	22·7	41·6	0·6	19·8	38·8	4 0·70	+ 0·09	53·21	+53·21	5 4 54·00
Mar. 11	Sun 1 Limb···········	40·1	53·7	6·9	20·2	33·6	25 6·90	+ 0·05	·········	+53·26	23 26 0·21
	Sun 2 Limb···········	49·6	3·0	16·4	29·7	43·1	27 16·36	+ 0·05	·········	+53·26	23 28 9·67
	α Aurigæ···············	22·7	41·7	0·7	19·8	38·8	4 0·74	+ 0·06	53·18	+53·27	5 4 54·07
	β Orionis··············	31·7	45·2	58·5	12·1	25·5	5 58·60	+ 0·05	53·31	+53·27	5 6 51·92
	β Tauri ················	48·6	3·8	18·8	33·9	49·0	15 18·82	+ 0·07	53·19	+53·27	5 16 12·16
	δ Orionis ··············	31·2	44·5	57·7	11·0	24·4	22 57·76	+ 0·06	53·27	+53·27	5 23 51·09
	Moon 1 Limb·········	11·4	27·0	42·7	58·2	13·7	7 42·60	+ 0·07	·········	+53·28	6 8 35·95
	μ Geminorum········	56·1	10·5	24·8	39·4	53·7	12 24·90	+ 0·07	53·38	+53·28	6 13 18·25
	Venus 2 Limb········	12·0	26·1	38·9	53·5	7·6	19 39·80	+ 0·02	·········	+53·46	21 20 33·28
Mar. 12	Sun 1 Limb···········	20·0	33·8	47·0	0·4	13·5	28 46·94	+ 0·01	·········	+53·48	23 29 40·43
	Sun 2 Limb···········	29·7	43·1	56·3	9·4	23·1	30 56·32	+ 0·01	·········	+53·48	23 31 49·81
	α Ursæ Minoris······	······	······	······	······	54·0	0 24·60	− 5·10	53·34	+53·50	1 1 13·00
	β Tauri·················	48·5	3·6	18·6	33·7	48·7	15 18·62	− 0·03	53·47	+53·55	5 16 12·14
	δ Orionis ··············	31·1	44·4	57·7	10·8	24·2	22 57·64	+ 0·01	53·42	+53·55	5 23 51·20
	τ Geminorum ········	34·5	49·9	5·2	20·6	35·9	0 5·22	− 0·03	·········	+53·57	7 0 58·76
	δ Geminorum ········	13·3	27·4	42·0	56·4	10·8	9 41·98	− 0·02	53·60	+53·57	7 10 35·53
	Moon 1 Limb ········	55·0	10·2	25·7	41·0	56·2	12 25·62	− 0·02	·········	+53·57	7 13 19·17
	α Geminorum follow.	0·1	15·8	31·4	47·0	2·7	23 31·40	− 0·04	53·63	+53·58	7 24 24·94
	α Canis Minoris ······	36·7	50·1	3·4	16·7	30·0	30 3·38	+ 0·01	53·63	+53·58	7 30 56·97
	β Geminorum ········	9·3	24·2	39·4	54·6	9·7	34 39·44	− 0·03	53·66	+53·58	7 35 32·99
	φ Geminorum········	20·1	35·3	50·3	5·2	20·1	42 50·20	− 0·02	·········	+53·58	7 43 43·76
Mar. 13	Sun 1 Limb···········	59·8	13·3	26·5	39·8	53·1	32 26·50	− 0·01	·········	+53·71	23 33 20·20
	Sun 2 Limb···········	9·3	22·6	35·9	49·3	2·6	34 35·94	− 0·01	·········	+53·71	23 35 29·64
	α Ursæ Minoris ······	······	······	······	······	52·0	0 22·70	− 4·00	53·84	+53·72	1 1 12·42
	α Geminorum follow.	59·8	15·6	31·2	47·0	2·6	23 31·24	− 0·04	53·78	+53·77	7 24 24·97
	α Canis Minoris ······	36·5	49·8	3·2	16·6	30·0	30 3·22	− 0·01	53·79	+53·77	7 30 56·98
	β Geminorum ········	8·9	24·3	39·3	54·5	9·5	34 39·30	− 0·03	53·79	+53·78	7 35 33·05
	φ Geminorum········	······	35·0	50·2	5·2	20·1	42 50·16	− 0·03	·········	+53·78	7 43 43·91
	Moon 1 Limb········	55·1	······	25·1	39·8	54·6	13 24·95	− 0·02	·········	+53·78	8 14 18·71
	δ Cancri ···············	15·5	29·6	43·5	57·6	11·6	34 43·56	− 0·02	·········	+53·78	8 35 37·32

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Mar. 13	ε Hydræ	59·4	12·8	26·2	39·5	53·0	37 26·18	− 0·01	+53·77	+53·78	8 38 19·95
	ε Leonis	25·1	39·6	54·3	8·8	23·5	35 54·26	− 0·02	53·77	+53·78	9 36 48·02
Mar. 14	α Aurigæ	22·1	41·2	0·2	19·3	38·4	4 0·24	+ 0·01	53·66	+53·73	5 4 53·98
	β Tauri	48·1	3·3	18·4	33·4	48·5	15 18·34	0·00	53·68	+58·73	5 16 12·07
	δ Orionis	30·7	44·1	57·4	10·6	23·8	22 57·32	− 0·02	53·74	+53·73	5 23 51·03
	α Geminorum follow.	59·8	15·6	31·2	46·9	2·7	23 31·24	0·00	53·72	+53·73	7 24 24·97
	α Canis Minoris	36·6	49·9	3·2	16·5	29·8	30 3·20	− 0·01	53·80	+53·73	7 30 56·92
	β Geminorum	9·1	24·2	39·2	54·3	9·4	34 39·24	0·00	53·80	+53·73	7 35 32·97
Mar. 15	α Geminorum follow.	59·7	15·6	31·4	47·2	3·0	23 31·38	0·00	53·56	+53·62	7 24 25·00
	α Canis Minoris	36·6	50·0	3·4	16·7	30·0	30 3·34	0·00	53·63	+53·62	7 30 56·96
	β Geminorum	9·2	24·3	39·4	54·4	9·5	34 39·36	+ 0·01	53·66	+53·62	7 35 32·99
Mar. 16	Sun 1 Limb	57·8	11·1	24·6	37·7	……	43 24·46	0·00	………	+53·88	23 44 18·34
	Sun 2 Limb	……	20·2	33·5	46·7	0·0	45 33·44	0·00	………	+53·88	23 46 27·32
	α Leonis	31·5	45·2	58·9	12·4	26·1	58 58·82	+ 0·01	54·18	+54·05	9 59 52·88
	ϱ Leonis	4·4	17·7	31·1	44·6	58·0	23 31·16	+ 0·01	………	+54·05	10 24 25·22
	34 Sextantis	3·2	16·4	29·8	43·1	56·5	33 29·80	+ 0·01	………	+54·05	10 34 23·86
	Moon 1 Limb	55·0	8·8	22·2	35·9	49·7	51 22·32	0·00	………	+54·06	10 52 16·38
	δ Leonis	15·4	29·6	43·8	58·1	12·4	4 43·86	+ 0·01	54·21	+54·06	11 5 37·93
	σ Leonis	34·5	47·8	1·1	14·6	28·0	12 1·20	0·00	………	+54·07	11 12 55·27
	υ Leonis	27·1	40·4	53·7	6·9	20·3	27 53·68	0·00	………	+54·07	11 28 47·75
	β Leonis	34·6	48·2	2·0	15·8	29·5	40 2·02	+ 0·01	54·10	+54·07	11 40 56·10
	α Cygni	26·6	45·2	3·8	22·6	41·4	35 3·92	+ 0·02	53·90	+54·12	20 35 58·06
	Venus 2 Limb	20·5	34·2	47·9	1·7	15·5	43 47·96	+ 0·01	………	+54·12	21 44 42·09
Mar. 17	Sun 1 Limb	36·3	49·8	2·9	16·3	29·4	47 2·94	+ 0·02	………	+54·12	23 47 57·08
	Sun 2 Limb	45·1	58·5	11·8	25·1	38·6	49 11·82	+ 0·02	………	+54·12	23 50 5·96
	α Ursæ Minoris	49·0	5·5	18·5	34·0	49·0	0 19·20	− 2·11	54·38	+54·13	1 1 11·22
	α Arietis	47·0	1·4	15·7	30·2	44·6	57 15·78	+ 0·03	54·04	+54·13	1 58 9·94
	δ Ursæ Minoris S.P.	23·5	6·5	48·5	32·0	15·0	22 49·10	+ 1·13	54·35	+54·14	6 23 44·37
	α Canis Majoris	45·1	58·9	12·8	26·6	40·5	37 12·78	+ 0·01	54·30	+54·14	6 38 6·93
	α Geminorum follow.	59·3	15·1	30·7	46·4	2·1	23 30·72	+ 0·02	54·17	+54·14	7 24 24·88
	α Canis Minoris	36·3	49·5	2·8	16·2	29·5	30 2·86	+ 0·02	54·07	+54·14	7 30 57·02
	δ Leonis	15·3	29·6	43·9	58·3	12·5	4 43·92	+ 0·03	54·13	+54·15	11 5 38·10
	σ Leonis	34·5	47·8	1·2	14·6	28·1	12 1·24	+ 0·02	………	+54·15	11 12 55·41
	υ Leonis	27·0	40·4	53·7	6·8	20·1	27 53·60	+ 0·02	………	+54·15	11 28 47·77
	Moon 1 Limb	55·6	8·8	22·7	36·1	49·7	38 22·58	+ 0·02	………	+54·15	11 39 16·75
	(*a*) Moon 2 Limb	1·6	14·9	28·7	42·2	55·7	40 28·62	+ 0·02	………	+54·15	11 41 22·79
	7 Virginis	26·7	40·1	53·3	6·7	20·0	50 53·36	+ 0·03	………	+54·15	11 51 47·54
	η Virginis	24·9	38·2	51·5	4·7	18·1	10 51·48	+ 0·02	………	+54·15	12 11 45·65
Mar. 18	Sun 1 Limb	15·0	28·4	41·7	55·0	8·2	50 41·66	+ 0·05	………	+54·18	23 51 35·89
	Sun 2 Limb	24·0	37·2	50·6	3·8	17·1	52 50·54	+ 0·05	………	+54·18	23 53 44·77
	Mercury 1 Limb	38·8	52·0	5·5	19·1	32·7	56 5·62	+ 0·06	………	+54·19	0 56 59·87
	α Ursæ Minoris	50·0	4·5	21·0	33·5	50·0	0 19·80	− 2·45	53·89	+54·19	1 1 11·54
	α Arietis	46·8	1·2	15·5	30·1	44·5	57 15·62	+ 0·06	54·16	+54·19	1 58 9·87
	η Tauri	36·2	50·5	5·2	19·7	34·4	37 5·20	+ 0·06	54·14	+54·19	3 37 59·45
	δ Ursæ Minoris S.P.	23·5	6·5	50·0	32·5	16·0	22 49·70	+ 1·32	53·90	+54·20	6 23 45·22
	α Canis Majoris	45·0	58·9	12·7	26·7	40·5	37 12·76	+ 0·04	54·27	+54·20	6 38 7·00
	α Geminorum follow.	59·3	15·0	30·7	46·4	2·1	23 30·70	+ 0·05	54·14	+54·21	7 24 24·96
	α Canis Minoris	35·8	49·3	2·6	16·0	29·4	30 2·62	+ 0·05	54·26	+54·21	7 30 56·88
	β Leonis	34·3	48·1	1·8	15·7	29·4	40 1·86	+ 0·05	54·23	+54·25	11 40 56·16
	7 Virginis	26·6	39·8	53·3	6·7	20·0	50 53·28	+ 0·05	………	+54·25	11 51 47·58
	η Virginis	24·6	38·1	51·3	4·6	17·8	10 51·28	+ 0·05	………	+54·25	12 11 45·58
	Moon 2 Limb	3·8	17·5	31·3	45·0	58·6	26 31·24	+ 0·05	………	+54·26	12 27 25·55

(*a*) Not fully enlightened; $0^{\mathrm{s}}{\cdot}07$ to be added to Apparent Right Ascension observed for defect of illuminated disc.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Mar. 19	ε Hydræ	58·7	12·1	25·4	38·7	52·1	37 25·40	+ 0·04	+54·43	+54·45	8 38 19·89
	α Hydræ	24·1	37·5	50·9	4·3	17·6	18 50·88	+ 0·01	54·49	+54·46	9 19 45·35
	ε Leonis	24·3	39·0	53·5	8·1	22·6	35 53·50	+ 0·06	54·40	+54·46	9 36 48·02
	α Leonis	31·3	44·9	58·4	12·1	25·8	58 58·50	+ 0·05	54·45	+54·46	9 59 53·01
	δ Leonis	14·7	29·4	43·5	57·8	12·1	4 43·50	+ 0·06	54·52	+54·47	11 5 38·03
	ψ Virginis	43·1	56·5	10·1	23·6	36·9	45 10·04	+ 0·01	....	+54·47	12 46 4·52
	49 Virginis	12·2	25·5	39·0	52·5	6·0	58 39·04	+ 0·01	....	+54·47	12 59 33·52
	α Ursæ Minoris S.P.	......	1·0	16·0	29·5	45·5	0 15·72	+ 0·50	54·71	+54·47	13 1 10·69
	Moon 2 Limb	14·6	28·5	42·3	56·3	10·2	12 42·38	0·00	....	+54·47	13 13 36·85
Mar. 20	α Ursæ Minoris	48·5	5·0	18·5	34·5	49·0	0 19·10	− 2·50	54·23	+54·50	1 1 11·10
	α Ceti	34·6	47·7	1·0	14·4	27·6	53 1·06	+ 0·01	54·42	+54·50	2 53 55·57
	α Canis Majoris	44·8	58·6	12·6	26·3	40·2	37 12·50	− 0·01	54·55	+54·51	6 38 7·00
	α Geminorum follow.	59·0	14·7	30·4	46·2	1·7	23 30·40	0·00	54·46	+54·52	7 24 24·92
	α Canis Minoris	35·4	49·1	2·3	15·6	29·0	30 2·28	0·00	54·62	+54·52	7 30 56·80
	β Geminorum	8·3	23·4	38·3	53·6	8·7	34 38·46	0·00	54·49	+54·52	7 35 32·98
	Venus 2 Limb	22·8	36·5	50·2	4·1	17·6	2 50·24	+ 0·11	....	+54·60	22 3 44·95
Mar. 21	Sun 1 Limb	9·5	22·9	36·0	49·5	2·8	1 36·14	+ 0·11	....	+54·62	0 2 30·87
	Sun 2 Limb	18·2	31·6	44·8	58·3	11·6	3 44·90	+ 0·11	....	+54·62	0 4 39·63
	α Ursæ Minoris	......	7·0	19·5	34·5	49·5	0 20·38	− 4·25	54·52	+54·62	1 1 10·75
	μ Geminorum	54·7	9·1	23·4	37·8	52·3	12 23·46	+ 0·10	54·62	+54·65	6 13 18·21
	ε Hydræ	58·4	11·6	25·0	38·4	51·8	37 25·04	+ 0·11	54·70	+54·66	8 38 19·81
Mar. 22	Venus 2 Limb	49·2	......	16·4	......	......	12 16·43	+ 0·12	....	+54·78	22 13 11·33
Mar. 24		INSTRUMENT REVERSED.									
Mar. 25	γ^2 Sagittarii	7·2	22·5	38·0	53·6	8·9	54 38·04	+ 0·36	....	+54·99	17 55 33·39
	α Lyræ	2·6	19·5	36·5	53·6	10·6	30 36·56	+ 0·33	55·00	+54·99	18 31 31·88
	β Lyræ	44·0	59·8	15·6	31·6	47·5	43 15·70	+ 0·32	54·98	+54·99	18 44 11·01
Mar. 26	Sun 1 Limb	19·0	32·2	45·5	58·8	12·1	19 45·52	+ 0·33	....	+55·03	0 20 40·88
	Sun 2 Limb	......	40·7	54·1	7·2	20·6	21 53·98	+ 0·33	....	+55·03	0 22 49·34
	α Ursæ Minoris	44·0	......	......	......	......	0 12·70	+ 2·11	55·15	+55·04	1 1 9·85
Mar. 27	Sun 1 Limb	56·7	9·9	23·2	36·6	49·8	23 23·24	+ 0·31	....	+55·22	0 24 18·77
	Sun 2 Limb	5·2	18·6	31·8	45·3	58·6	25 31·90	+ 0·31	....	+55·22	0 26 27·43
Mar. 28	Sun 1 Limb	34·4	47·8	1·2	14·4	27·7	27 1·10	+ 0·20	....	+55·40	0 27 56·70
	Sun 2 Limb	43·0	56·5	9·7	23·0	36·5	29 9·74	+ 0·20	....	+55·40	0 30 5·34
	α Ursæ Minoris	44·0	59·0	14·5	27·0	42·5	0 13·40	+ 0·87	55·53	+55·40	1 1 9·67
	α Arietis	45·4	59·8	14·2	28·6	42·8	57 14·16	+ 0·20	55·44	+55·41	1 58 9·77
	α Ceti	33·2	46·5	59·7	13·0	26·4	52 59·76	+ 0·20	55·46	+55·42	2 53 55·38
	η Tauri	34·7	49·1	3·7	18·2	32·6	37 3·66	+ 0·20	55·42	+55·43	3 37 59·29
	μ Geminorum	53·6	7·8	22·3	36·8	51·2	12 22·34	+ 0·20	55·52	+55·43	6 13 17·97
	δ Ursæ Minoris S.P.	28·0	11·0	54·0	37·5	20·0	22 54·10	− 0·21	54·55	+55·42	6 23 49·31
	α Canis Majoris	43·6	57·5	11·4	25·2	39·0	37 11·34	+ 0·22	55·33	+55·42	6 38 6·98
Mar. 31	Sun 1 Limb	29·0	42·2	55·6	8·8	22·1	37 55·54	+ 0·23	....	+55·26	0 38 51·03
	Sun 2 Limb	37·6	50·8	4·4	17·6	30·8	40 4·24	+ 0·23	....	+55·26	0 40 59·73
	α Ursæ Minoris	42·5	......	......	24·5	......	0 10·65	+ 3·87	55·15	+55·26	1 1 9·78
	α Arietis	45·5	59·8	14·3	28·6	42·8	57 14·20	+ 0·24	55·35	+55·26	1 58 9·70
	α Tauri	22·0	35·8	49·7	3·7	17·6	25 49·76	+ 0·24	55·23	+55·25	4 26 45·25
	δ Ursæ Minoris S.P.	......	......	55·5	39·0	......	22 55·80	− 1·53	55·21	+55·24	6 23 49·51
	α Canis Majoris	43·8	57·5	11·3	25·1	39·1	37 11·36	+ 0·22	55·25	+55·24	6 38 6·82
	α Geminorum follow.	57·8	13·6	29·1	44·8	0·6	23 29·18	+ 0·26	55·22	+55·23	7 24 24·67

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Mar. 31	α Canis Minoris	34·7	48·0	1·3	14·6	28·0	30 1·32	+ 0·23	+55·19	+55·23	7 30 56·78
April 2	α Hydræ	23·6	36·8	50·3	3·7	16·9	18 50·26	+ 0·25	54·73	+54·78	9 19 45·29
	ε Leonis	23·8	38·1	52·8	7·4	21·8	35 52·78	+ 0·23	54·83	+54·78	9 36 47·79
	α Pegasi	24·7	38·5	52·3	6·0	19·9	55 52·28	+ 0·23	55·06	+54·87	22 56 47·38
	Venus 2 Limb	49·5	2·6	16·2	29·5	42·8	3 16·12	+ 0·24	....	+54·87	23 4 11·23
	α Andromedæ	42·2	57·1	12·2	27·3	42·3	59 12·22	+ 0·24	54·78	+54·88	0 0 7·34
April 3	Sun 1 Limb	24·5	37·8	51·2	4·5	18·0	48 51·20	+ 0·23	....	+54·88	0 49 46·31
	Sun 2 Limb	33·3	46·7	0·1	13·5	26·8	51 0·08	+ 0·23	....	+54·88	0 51 55·19
	α Ursæ Minoris	43·5	......	14·0	27·5	44·0	0 13·65	+ 2·02	54·00	+54·88	1 1 10·55
	α Arietis	45·8	0·2	14·6	28·9	43·4	57 14·58	+ 0·23	54·98	+54·89	1 58 9·70
	η Tauri	35·1	49·6	4·3	18·6	33·2	37 4·16	+ 0·23	54·84	+54·90	3 37 59·29
	α Tauri	22·5	36·4	50·1	3·8	17·6	25 50·08	+ 0·23	54·89	+54·90	4 26 45·21
	α Canis Minoris	34·8	48·4	1·5	14·8	28·3	30 1·56	+ 0·23	54·90	+54·89	7 30 56·68
	β Geminorum	7·4	22·5	37·7	52·8	7·7	34 37·62	+ 0·24	54·85	+54·89	7 35 32·75
	Venus 2 Limb	23·7	37·0	50·4	3·6	17·2	7 50·38	+ 0·24	....	+54·86	23 8 45·48
April 4	Sun 1 Limb	3·2	16·6	30·0	43·5	56·8	52 30·02	+ 0·24	....	+54·86	0 53 25·12
	Sun 2 Limb	12·2	25·6	39·0	52·4	5·7	54 38·98	+ 0·24	....	+54·86	0 55 34·08
	α Ursæ Minoris	......	......	15·0	......	......	0 14·70	+ 2·02	52·97	+54·86	1 1 11·58
	α Tauri	22·4	36·3	50·2	3·9	17·8	25 50·12	+ 0·23	54·84	+54·85	4 26 45·20
	δ Ursæ Minoris S.P.	30·5	......	......	41·0	......	22 57·10	− 0·68	54·44	+54·85	6 23 51·27
	α Canis Majoris	44·0	57·6	11·6	25·5	39·4	37 11·62	+ 0·25	54·89	+54·85	6 38 6·72
	δ Geminorum	11·4	25·6	40·0	54·6	8·8	9 40·08	+ 0·24	54·87	+54·85	7 10 35·17
	α Geminorum follow.	58·2	13·7	29·5	45·4	1·0	23 29·56	+ 0·24	54·78	+54·84	7 24 24·64
	α Canis Minoris	34·9	48·2	1·5	14·8	28·4	30 1·56	+ 0·23	54·89	+54·84	7 30 56·63
April 5	Venus 2 Limb	30·8	44·2	57·5	10·8	24·3	16 57·52	+ 0·24	....	+54·54	23 17 52·30
	α Ursæ Minoris	43·0	56·5	......	26·5	......	0 11·50	+ 2·02	56·27	+54·53	1 1 8·05
April 6	Sun 2 Limb	......	43·8	57·3	10·7	24·1	1 57·27	+ 0·24	....	+54·53	1 2 52·04
	υ^1 Tauri	21·4	35·8	50·3	4·6	18·8	15 50·18	+ 0·24	....	+54·51	4 16 44·93
	α Tauri	22·7	36·5	50·5	4·4	18·2	25 50·46	+ 0·23	54·48	+54·50	4 26 45·19
	Moon 1 Limb	54·9	10·2	25·8	41·2	56·8	38 25·78	+ 0·24	....	+54·50	4 39 20·52
	α Aurigæ	20·6	39·7	58·8	17·6	36·7	3 58·68	+ 0·24	54·49	+54·50	5 4 53·42
	β Orionis	29·8	43·3	56·8	10·2	23·6	5 56·74	+ 0·25	54·56	+54·50	5 6 51·49
	β Tauri	46·7	1·8	16·8	32·0	47·2	15 16·90	+ 0·24	54·49	+54·50	5 16 11·64
	δ Orionis	29·4	42·6	56·0	9·3	22·6	22 55·98	+ 0·24	54·46	+54·50	5 23 50·72
	26 Aurigæ	57·1	12·6	28·1	43·4	59·0	27 28·04	+ 0·24	....	+54·50	5 28 22·78
April 7	μ Geminorum	54·6	9·0	23·5	37·8	52·4	12 23·46	+ 0·23	54·20	+54·20	6 13 17·89
April 8	Venus 2 Limb	8·1	21·2	34·5	48·2	......	30 34·68	+ 0·24	....	+53·94	23 31 28·86
April 9	Sun 1 Limb	......	......	47·0	0·7	14·2	10 47·19	+ 0·24	....	+53·93	1 11 41·36
	Sun 2 Limb	29·7	43·2	56·4	9·8	23·3	12 56·48	+ 0·24	....	+53·93	1 13 50·65
	Moon 1 Limb	1·1	15·9	30·8	45·8	0·8	55 30·88	+ 0·24	....	+53·88	7 56 25·00
	δ Cancri	14·7	28·8	42·8	56·7	10·8	34 42·76	+ 0·24	....	+53·88	8 35 36·88
	ε Hydræ	58·7	12·1	25·5	38·8	52·3	37 25·48	+ 0·24	53·88	+53·88	8 38 19·60
April 10	Sun 1 Limb	0·3	13·8	27·3	40·8	54·2	14 27·28	+ 0·24	....	+53·75	1 15 21·27
	Sun 2 Limb	......	......	......	49·8	3·4	16 36·42	+ 0·24	....	+53·75	1 17 30·41
	δ Geminorum	12·3	26·7	41·0	55·4	9·8	9 41·04	+ 0·24	53·81	+53·70	7 10 34·98
	Moon 1 Limb	37·9	52·3	6·7	21·2	35·6	53 6·74	+ 0·25	....	+53·69	8 54 0·68
	α Hydræ	24·6	37·8	51·3	4·5	18·1	18 51·26	+ 0·25	53·63	+53·68	9 19 45·19
	λ Leonis	14·0	28·6	43·1	57·6	12·3	21 43·12	+ 0·23	....	+53·68	9 22 37·03
	α Leonis	31·6	45·4	58·8	12·5	26·0	58 58·86	+ 0·23	53·73	+53·68	9 59 52·77

Date.	Object Observed.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
April 10	δ Leonis	15·6	29·8	44·1	58·4	12·6	4 44·10	+ 0·24	+53·68	+53·67	11 5 38·01
	δ Hydræ & Crateris	1·7	15·4	29·0	42·7	56·4	10 29·04	+ 0·25	53·53	+53·67	11 11 22·96
April 13	α Arietis	47·6	2·0	......	......	......	57 16·45	– 0·09	53·46	+53·38	1 58 9·74
	χ Leonis	27·8	41·4	......	......	......	55 54·72	– 0·12	....	+53·33	10 56 47·93
	δ Leonis	16·2	30·6	44·8	59·1	13·5	4 44·84	– 0·10	53·26	+53·33	11 5 38·07
	75 Leonis	45·8	59·2	......	......	......	8 12·44	– 0·13	....	+53·33	11 9 5·64
	Moon 1 Limb	......	......	16·1	......	......	22 16·09	– 0·14	....	+53·33	11 23 9·28
	Venus 2 Limb	42·5	55·8	9·1	22·5	35·7	53 9·12	– 0·14	....	+53·24	23 54 2·22
	α Ursæ Minoris	44·0	57·5	14·0	25·5	39·0	0 12·00	+ 6·46	52·36	+53·23	1 1 11·69
April 14	Sun 1 Limb	43·4	56·8	10·2	23·8	37·1	29 10·26	– 0·12	....	+53·22	1 30 3·36
	Sun 2 Limb	52·8	6·5	20·0	33·4	47·1	31 19·96	– 0·12	....	+53·22	1 32 13·06
	η Tauri	37·0	51·4	6·0	20·7	35·2	37 6·06	– 0·09	53·18	+53·21	3 37 59·18
	α Tauri	24·5	38·4	52·0	5·8	19·6	25 52·06	– 0·11	53·15	+53·20	4 26 45·15
	α Aurigæ	21·9	40·8	0·1	18·9	38·1	3 59·96	– 0·01	53·32	+53·20	5 4 53·15
	β Orionis	31·5	45·0	58·4	11·8	25·2	5 58·38	– 0·16	53·22	+53·20	5 6 51·42
	δ Ursæ Minoris S.P.	38·0	21·5	4·0	47·0	29·5	23 4·00	– 3·24	54·43	+53·18	6 23 53·94
	α Canis Majoris	46·0	59·8	13·6	27·5	41·3	37 13·64	– 0·17	53·12	+53·17	6 38 6·64
April 15	Sun 1 Limb	24·9	38·4	51·8	5·4	19·0	32 51·90	– 0·12	....	+52·89	1 33 44·67
	Sun 2 Limb	34·7	48·3	1·7	15·4	28·8	35 1·78	– 0·12	....	+52·89	1 35 54·55
	α Tauri	24·7	38·5	52·4	6·1	19·9	25 52·32	– 0·11	52·88	+52·84	4 26 45·05
	α Aurigæ	22·2	41·2	0·4	19·5	38·6	4 0·38	– 0·01	52·89	+52·83	5 4 53·20
	β Tauri	48·6	3·6	18·8	33·8	48·8	15 18·72	– 0·08	52·87	+52·83	5 16 11·47
	α Geminorum follow.	0·3	15·9	31·6	47·4	3·2	23 31·68	– 0·06	52·77	+52·80	7 24 24·42
	21 Virginis	14·6	28·0	41·6	54·8	8·3	24 41·46	– 0·16	....	+52·73	12 25 34·03
	γ Virginis	16·4	29·9	43·2	56·5	9·7	32 43·14	– 0·14	....	+52·73	12 33 35·73
	12 Canum Venat.	8·3	25·5	42·6	59·6	16·8	47 42·56	– 0·03	52·65	+52·73	12 48 35·26
	Moon 1 Limb	5·2	19·1	32·8	46·8	0·7	53 32·92	– 0·16	....	+52·72	12 54 25·48
	α Ursæ Minoris S.P.	59·0	13·0	25·5	40·5	......	0 26·42	– 6·90	51·61	+52·72	13 1 12·24
	53 Virginis	15·4	29·2	43·2	56·8	10·4	2 43·00	– 0·17	....	+52·72	13 3 35·55
	α Virginis	29·4	42·7	56·3	9·7	23·3	15 56·28	– 0·16	52·66	+52·72	13 16 48·84
	α Ursæ Minoris	......	58·0	......	26·0	40·0	0 12·20	+ 6·46	52·57	+52·56	1 1 11·22
April 16	Sun 1 Limb	7·2	20·7	34·1	47·7	1·2	36 34·18	– 0·12	....	+52·55	1 37 26·61
	Sun 2 Limb	16·9	30·5	44·0	57·4	11·1	38 43·98	– 0·12	....	+52·55	1 39 36·41
	α Tauri	25·1	38·8	52·6	6·6	20·4	25 52·70	– 0·11	52·49	+52·51	4 26 45·10
	δ Ursæ Minoris S.P.	40·0	23·5	6·0	49·0	32·5	23 6·20	– 3·24	51·86	+52·49	6 23 55·45
	α Canis Majoris	56·7	0·5	14·3	27·9	41·8	37 14·24	– 0·17	52·48	+52·48	6 38 6·55
	α Ursæ Minoris S.P.	......	......	25·0	38·0	......	0 24·60	– 6·90	53·65	+52·39	13 1 10·09
	53 Virginis	15·8	29·5	43·5	57·2	11·1	2 43·42	– 0·17	....	+52·39	13 3 35·64
	α Virginis	29·5	43·1	56·5	10·0	23·4	15 56·50	– 0·16	52·45	+52·38	13 16 48·72
	Moon 1 Limb	35·7	49·8	4·0	18·2	32·2	40 3·98	– 0·17	....	+52·37	13 40 56·18
	Moon 2 Limb	43·2	57·4	11·4	25·6	39·7	42 11·46	– 0·17	....	+52·37	13 43 3·66
	η Bootis	46·4	0·5	14·5	28·5	42·6	46 14·50	– 0·10	52·26	+52·37	13 47 6·77
	α Bootis	4·0	18·2	32·2	46·3	0·5	7 32·24	– 0·10	52·46	+52·37	14 8 24·51
	λ Virginis	......	......	38·0	51·5	5·1	9 37·92	– 0·17	....	+52·37	14 10 30·12
	Venus 2 Limb	12·5	25·6	38·8	52·1	......	6 38·91	– 0·14	....	+52·19	0 7 30·96
	α Ursæ Minoris	......	59·0	13·5	25·5	41·5	0 12·98	+ 6·46	52·02	+52·18	1 1 11·62
April 17	Sun 2 Limb	59·7	13·2	26·6	40·1	53·7	42 26·66	– 0·12	....	+52·17	1 43 18·71
	α Tauri	25·5	39·2	53·1	6·8	20·7	25 53·06	– 0·11	52·12	+52·12	4 26 45·07
	β Orionis	32·5	45·8	59·4	12·8	26·3	5 59·36	– 0·16	52·21	+52·11	5 6 51·31
	12 Canum Venat.	9·0	26·2	43·5	0·5	17·8	47 43·40	– 0·03	51·81	+51·96	12 48 35·33
	α Ursæ Minoris S.P.	57·0	11·5	25·0	37·5	53·0	0 24·80	– 6·90	53·68	+51·95	13 1 9·85
	α Bootis	4·5	18·7	32·8	46·8	1·1	7 32·78	– 0·10	51·93	+51·92	14 8 24·60
	λ Virginis	11·4	24·8	38·4	52·2	5·5	9 38·46	– 0·17	....	+51·92	14 10 30·21

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
April 17	Moon 2 Limb	59·4	13·6	28·1	42·5	57·5	30 28·22	– 0·17	....	+51·92	14 31 19·97
	α^2 Libræ	45·6	59·2	12·8	26·7	40·5	41 12·96	– 0·17	+52·03	+51·91	14 42 4·70
	20 Libræ	24·7	39·4	54·1	8·6	23·4	53 54·04	– 0·18	....	+51·91	14 54 45·77
	Venus 2 Limb	42·2	55·6	8·8	22·3	35·6	11 8·90	– 0·14	....	+51·68	0 12 0·44
	α Ursæ Minoris	......	4·5	16·5	29·0	42·0	0 16·10	+ 6·46	49·14	+51·66	1 1 14·22
April 18	Sun 1 Limb	32·6	46·0	59·6	13·2	26·7	43 59·62	– 0·12	....	+51·64	1 44 51·14
	Sun 2 Limb	42·7	56·1	9·6	23·2	37·0	46 9·72	– 0·12	....	+51·64	1 47 1·24
	α Aurigæ	23·5	42·7	1·7	20·7	39·8	4 1·68	– 0·01	51·55	+51·56	5 4 53·23
	β Orionis	33·0	46·4	59·7	13·4	26·7	5 59·84	– 0·16	51·71	+51·56	5 6 51·24
	δ Ursæ Minoris S.P.	41·0	24·0	7·0	51·0	33·5	23 7·30	– 3·24	51·38	+51·53	6 23 55·59
	α Canis Majoris	47·5	1·2	15·4	29·0	42·7	37 15·16	– 0·17	51·53	+51·52	6 38 6·51
	α Ursæ Minoris S.P.	2·5	12·5	28·0	40·5	55·0	0 27·70	– 6·90	51·02	+51·35	13 1 12·15
	α Bootis	5·1	19·3	33·5	47·5	1·7	7 33·42	– 0·10	51·30	+51·31	14 8 24·63
	α^2 Libræ	46·2	59·8	13·7	27·6	41·4	41 13·74	– 0·11	51·21	+51·30	14 42 4·93
	Jupiter 1 Limb	38·5	......	6·0	......	33·4	54 5·97	– 0·17	....	+51·29	14 54 57·09
	Jupiter 2 Limb	......	55·1	......	22·8	......	54 8·95	– 0·17	....	+51·29	14 55 0·07
	Moon 2 Limb	28·6	43·1	58·6	13·2	28·0	20 58·30	– 0·18	....	+51·28	15 21 49·40
	1 Scorpii	4·4	19·0	33·7	48·6	3·1	40 33·76	– 0·18	....	+51·27	15 41 24·85
	δ Scorpii	35·8	50·2	4·6	18·8	33·4	50 4·56	– 0·17	....	+51·26	15 50 55·65
April 19	Venus 2 Limb	......	......	8·8	22·4	35·6	20 8·94	– 0·14	....	+50·32	0 20 59·12
April 20	α Leonis	35·4	49·2	2·7	16·5	29·8	59 2·72	– 0·11	50·10	+50·04	9 59 52·65
	δ Leonis	19·7	33·7	48·0	2·3	16·6	4 48·06	– 0·10	49·99	+50·01	11 5 37·97
	β Leonis	38·7	52·4	6·3	20·0	33·8	40 6·24	– 0·11	49·99	+49·99	11 40 56·12
	12 Canum Venat.	11·1	28·0	45·2	2·5	19·7	47 45·30	– 0·03	49·91	+49·95	12 48 35·22
	α Ursæ Minoris S.P.	2·5	14·5	27·0	43·0	57·0	0 28·80	– 6·90	50·44	+49·94	13 1 11·84
	α Bootis	6·5	20·7	34·8	49·0	3·1	7 34·82	– 0·10	49·92	+49·91	14 8 24·63
April 21	β Leonis	39·5	53·3	7·2	20·8	34·5	40 7·06	– 0·11	49·16	+49·18	11 40 56·13
	12 Canum Venat.	11·8	28·9	46·1	3·3	20·3	47 46·08	– 0·03	49·13	+49·14	12 48 35·19
	α Ursæ Minoris S.P.	3·0	17·0	30·0	44·5	59·0	0 30·70	– 6·90	48·83	+49·13	13 1 12·93
	η Bootis	49·6	3·5	17·8	31·7	45·8	46 17·68	– 0·10	49·11	+49·11	13 47 6·69
	α Bootis	7·5	21·5	35·6	49·6	3·8	7 35·60	– 0·10	49·15	+49·10	14 8 24·60
	ε Bootis	43·7	58·7	13·8	28·8	43·8	37 13·76	– 0·08	49·05	+49·08	14 38 2·76
	Jupiter 1 Limb	......	29·9	......	57·4	......	52 43·65	– 0·17	....	+49·07	14 53 32·55
	Jupiter 2 Limb	19·1	......	46·7	......	14·2	52 46·67	– 0·17	....	+49·07	14 53 35·57
	α Ursæ Minoris	......	5·0	18·0	......	46·5	0 18·57	+ 6·46	47·74	+48·76	1 1 13·79
April 22	Sun 1 Limb	......	......	......	10·4	23·8	58 56·65	– 0·12	....	+48·73	1 59 45·26
	Sun 2 Limb	39·8	53·5	7·2	20·6	34·3	1 7·08	– 0·12	....	+48·73	2 1 55·69
	α Bootis	8·3	22·2	36·3	50·5	4·7	7 36·40	– 0·10	48·35	+48·35	14 8 24·65
	ε Bootis	......	59·4	14·5	29·4	44·4	37 14·42	– 0·08	48·40	+48·34	14 38 2.68
	α^2 Libræ	49·4	2·8	16·8	30·4	44·5	41 16·78	– 0·17	48·28	+48·34	14 42 4·95
	Jupiter 1 Limb	48·1	......	15·7	......	43·3	52 15·70	– 0·17	....	+48·33	14 53 3·86
	Jupiter 2 Limb	......	4·8	......	32·1	......	52 18·45	– 0·17	....	+48·33	14 53 6·61
	Venus 2 Limb	12·8	25·6	39·5	52·4	5·7	33 39·20	– 0·14	....	+48·15	0 34 27·21
April 23	Sun 1 Limb	14·5	27·8	41·8	55·4	9·1	2 41·72	– 0·11	....	+48·12	2 3 29·73
	Sun 2 Limb	25·4	38·8	52·6	6·0	19·7	4 52·50	– 0·11	....	+48·12	2 5 40·51
	α Geminorum follow.	4·8	20·5	36·3	51·8	7·6	23 36·20	– 0·06	48·11	+48·02	7 24 24·16
	α Canis Minoris	41·8	55·2	8·5	21·7	35·2	30 8·48	– 0·13	48·04	+48·02	7 30 56·37
	β Geminorum	14·3	29·3	44·4	59·6	14·5	34 44·42	– 0·08	48·03	+48·02	7 35 32·36
	α Ursæ Minoris S.P.	......	19·0	31·0	45·5	1·0	0 32·30	– 6·90	47·84	+47·92	13 1 13·32
	α Bootis	8·8	22·8	36·9	50·9	5·1	7 36·90	– 0·10	47·86	+47·91	14 8 24·71
	ε Bootis	44·7	0·1	15·1	30·1	45·2	37 15·04	– 0·08	47·79	+47·90	14 38 2·86
	Jupiter 1 Limb	......	33·6	......	1·2	......	51 47·40	– 0·17	....	+47·89	14 52 35·12

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
April 23	Jupiter 2 Limb	22·8	......	50·3	......	......	51 50·30	− 0·17	....	+47·89	14 52 38·02
	Venus 2 Limb	42·8	56·5	9·6	23·1	36·5	38 9·70	− 0·14	....	+47·73	0 38 57·29
	Mercury 2 Limb	8·5	21·9	35·5	48·8	2·3	45 35·40	− 0·13	....	+47·73	0 46 23·00
	α Ursæ Minoris	......	6·5	22·5	35·0	47·0	0 20·95	+ 6·46	+45·99	+47·72	1 1 15·13
April 24	Sun 1 Limb	0·0	13·5	27·2	41·1	54·7	6 27·30	− 0·11	....	+47·70	2 7 14·89
	Sun 2 Limb	11·0	24·4	38·4	51·8	5·5	8 38·22	− 0·11	....	+47·70	2 9 25·81
	α Aurigæ	27·4	46·5	5·5	24·6	43·6	4 5·52	− 0·01	47·64	+47·65	5 4 53·16
	β Orionis	37·0	50·4	3·7	17·2	30·7	6 3·80	− 0·16	47·70	+47·65	5 6 51·29
	β Tauri	53·6	8·8	23·8	38·9	54·2	15 23·86	− 0·08	47·65	+47·65	5 16 11·43
	α Orionis	16·8	30·4	43·6	57·1	10·5	45 43·68	− 0·13	47·70	+47·64	5 46 31·19
	δ Ursæ Minoris S.P.	46·5	30·0	13·0	57·0	38·5	23 13·00	− 3·24	47·48	+47·63	6 23 57·39
	α Ursæ Minoris S.P.	......	21·5	34·0	50·0	......	0 35·17	− 6·90	45·30	+47·52	13 1 15·79†
	α² Libræ	50·1	3·8	17·8	31·6	45·1	41 17·68	− 0·17	47·41	+47·49	14 42 5·00
	Jupiter 1 Limb	50·8	......	18·4	......	46·2	51 18.47	− 0·17	....	+47·49	14 52 5·79
	Jupiter 2 Limb	......	7·8	......	35·2	......	51 21·50	− 0·17	....	+47·49	14 52 8·82
	Venus 2 Limb	13·2	26·6	40·1	53·4	6·6	42 39·98	− 0·13	....	+47·33	0 43 27·18
	α Ursæ Minoris	......	3·5	18·5	34·0	45·0	0 18·45	+ 6·46	48·83	+47·33	1 1 12·24
April 25	Sun 1 Limb	46·3	59·6	......	27·2	40·8	10 13·48	− 0·11	....	+47·31	2 11 0·68
	Sun 2 Limb	57·1	10·8	24·2	38·5	51·8	12 24·48	− 0·11	....	+47·31	2 13 11·68
	α Aurigæ	27·4	46·6	5·6	24·7	43·9	4 5·64	− 0·01	47·52	+47·26	5 4 52·89
	α Orionis	17·4	30·7	44·1	57·5	11·1	45 44·16	− 0·13	47·21	+47·25	5 46 31·28
	δ Ursæ Minoris S.P.	48·0	32·5	15·0	58·0	41·0	23 14·90	− 3·24	45·86	+47·24	6 23 58·90
	ε Hydræ	5·4	18·9	32·3	45·7	59·2	37 32·30	− 0·13	47·21	+47·20	8 38 19·37
	α Ursæ Minoris S.P.	7·5	21·5	33·5	48·0	1·5	0 34·40	− 6·90	46·41	+47·15	13 1 14·65
	ε Bootis	45·8	0·7	15·8	30·8	45·8	37 15·78	− 0·08	47·06	+47·14	14 38 2·84
	α² Libræ	50·6	4·5	18·3	31·9	45·8	41 18·22	− 0·17	46·88	+47·14	14 42 5·19
	Jupiter 1 Limb	......	35·6	......	3·3	......	50 49·45	− 0·17	....	+47·14	14 51 36·42
	Jupiter 2 Limb	25·1	......	52·8	......	20·2	50 52·70	− 0·17	....	+47·14	14 51 39·67
April 26	α Ursæ Minoris	54·0	......	20·0	31·5	45·0	0 19·18	+ 6·46	48·81	+46·83	1 1 12·47
April 27		INSTRUMENT REVERSED.									
	α Tauri	30·8	44·5	58·6	12·3	26·1	25 58·46	− 0·38	46·95	+46·80	4 26 44·88
	α Aurigæ	28·3	47·2	6·3	25·4	44·5	4 6·34	− 0·27	47·06	+46·79	5 4 52·86
	β Tauri	54·6	10·3	25·2	40·4	55·3	15 25·16	− 0·34	46·58	+46·79	5 16 11·61
	δ Ursæ Minoris S.P.	49·0	......	15·0	57·5	40·5	23 14·70	− 1·65	45·04	+46·78	6 23 59·83
	α Ursæ Minoris S.P.	2·5	15·0	30·0	42·5	58·5	0 29·70	− 3·28	48·21	+46·69	13 1 13·11
	α Bootis	10·1	24·3	38·4	52·6	6·8	7 38·44	− 0·36	46·60	+46·68	14 8 24·76
	ε Bootis	46·4	1·5	16·4	31·6	46·7	37 16·52	− 0·34	46·60	+46·67	14 38 2·85
	Jupiter 1 Limb	23·2	......	50·7	......	18·8	49 50·90	− 0·49	....	+46·67	14 50 37·08
	Jupiter 2 Limb	......	40·6	......	8·2	......	49 54·40	− 0·49	....	+46·67	14 50 40·58
	Venus 2 Limb	45·2	58·6	11·9	25·3	38·6	56 11·92	− 0·41	....	+46·51	0 56 58·02
April 28	Sun 1 Limb	7·2	20·8	34·6	48·3	1·8	21 34·54	− 0·38	....	+46·48	2 22 20·64
	Sun 2 Limb	18·5	32·3	46·2	59·8	13·6	23 46·08	− 0·38	....	+46·48	2 24 32·18
	α Hydræ	32·4	45·6	59·0	12·4	25·8	18 59·04	− 0·40	46·27	+46·38	9 19 45·02
	ε Leonis	32·4	46·8	1·5	16·2	30·7	36 1·52	− 0·35	46·32	+46·37	9 36 47·54
	α Leonis	39·2	53·1	6·6	20·4	34·1	59 6·68	− 0·38	46·31	+46·37	9 59 52·67
	β Leonis	42·3	56·4	10·1	23·9	37·6	40 10·06	− 0·38	46·39	+46·34	11 40 56·02
	α Ursæ Minoris S.P.	6·0	20·5	......	......	......	0 33·60	− 3·28	44·69	+46·31	13 1 16·63
	ε Bootis	46·7	1·8	16·7	31·8	46·9	37 16·78	− 0·34	46·35	+46·28	14 38 2·72
	Jupiter 1 Limb	......	7·7	......	35·2	......	49 21·45	− 0·49	....	+46·28	14 50 7·24
	Jupiter 2 Limb	56·9	......	24·6	......	52·2	49 24·57	− 0·49	....	+46·28	14 50 10·36

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	Interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
April 29	α Orionis	18·8	32·2	45·5	59·2	12·4	45 45·62	− 0·40	+45·98	+46·01	5 46 31·23
	12 Canum Venat.	15·2	32·4	49·6	6·8	23·9	47 49·58	− 0·29	45·85	+45·88	12 48 35·17
	α Ursæ Minoris S.P.	6·0	17·5	31·5	47·0	0·0	0 32·40	− 3·38	46·29	+45·88	13 1 15·00
	η Bootis	53·2	7·1	21·2	35·4	49·4	46 21·26	− 0·36	45·83	+45·87	13 47 6·77
	α Bootis	10·9	24·9	39·1	53·2	7·5	7 39·12	− 0·36	45·93	+45·87	14 8 24 63
	ε Bootis	47·3	2·3	17·2	32·3	47·2	37 17·26	− 0·34	45·88	+45·86	14 38 2·78
	Jupiter 1 Limb	24·6	……	52·0	……	19·5	48 52·03	− 0·49	………	+45·86	14 49 37·40
	Jupiter 2 Limb	……	41·3	……	8·8	……	48 55·05	− 0·49	………	+45·86	14 49 40·42
	α Ursæ Minoris	59·5	13·0	……	42·0	55·5	0 27·42	+ 2·66	45·53	+45·72	1 1 15·80
	Venus 2 Limb	48·2	1·5	14·8	……	……	5 14·89	− 0·41	………	+45·72	1 6 0·20
April 30	Sun 1 Limb	43·8	57·8	11·2	25·1	39·5	29 11·48	− 0·38	………	+45·70	2 29 56·80
	Sun 2 Limb	55·7	……	23·2	36·7	50·5	31 23·08	− 0·38	………	+45·70	2 32 8·40
	α Aurigæ	29·7	48·6	7·8	26·8	45·8	4 7·74	− 0·27	45·63	+45·67	5 4 53·14
	β Tauri	55·8	11·0	26·0	41·1	56·3	15 26·04	− 0·46	45·80	+45·67	5 16 11·25
	α Orionis	19·2	32·5	45·9	59·4	12·7	45 45·94	− 0·40	45·65	+45·66	5 46 31·20
	δ Ursæ Minoris S.P.	49·5	32·5	16·5	58·5	42·0	23 15·80	− 1·65	44·75	+45·65	6 23 59·80
	α Canis Majoris	53·6	7·4	21·2	35·1	49·0	37 21·26	− 0·49	45·58	+45·65	6 38 6·42
May 1	Sun 1 Limb	32·8	46·8	0·7	14·6	28·3	33 0·64	− 0·38	………	+45·34	2 33 45·60
	Sun 2 Limb	44·9	58·7	12·6	26·2	40·2	35 12·52	− 0·38	………	+45·34	2 35 57·48
	α Tauri	32·7	46·5	0·2	14·0	27·8	26 0·24	− 0·38	45·16	+45·31	4 26 45·17
	α Aurigæ	30·1	49·1	8·2	27·2	46·2	4 8·16	− 0·27	45·21	+45·30	5 4 53·19
	β Orionis	39·6	53·1	6·5	19·8	33·2	6 6·44	− 0·46	45·32	+45·30	5 6 51·28
	α Ursæ Minoris S.P.	8·5	21·0	38·0	51·0	3·5	0 36·40	− 3·28	43·12	+45·19	13 1 18·31
	ε Bootis	47·8	2·9	17·9	33·0	47·9	37 17·90	− 0·34	45·26	+45·18	14 38 2·74
	α^2 Libræ	52·4	6·5	20·3	34·1	47·8	41 20·22	− 0·49	45.27	+45·18	14 42 4·91
	Jupiter 1 Limb	……	38·7	……	6·2	……	47 52·45	− 0·49	………	+45·17	14 48 37·13
	Jupiter 2 Limb	28·3	……	55·7	……	23·1	47 55·70	− 0·49	………	+45·17	14 48 40·38
	α Ursæ Minoris	1·5	14·5	28·5	41·5	54·0	0 28·00	+ 2·66	45·79	+45·06	1 1 15·72
	Mercury 2 Limb	23·4	36·6	49·8	3·3	16·5	2 49·92	− 0·42	………	+45·06	1 3 34·56
	Venus 2 Limb	52·4	5·8	19·3	32·8	……	14 19·28	− 0·41	………	+45·06	1 15 3·93
May 2	Sun 1 Limb	22·4	36·3	50·1	4·1	17·9	36 50·16	− 0·38	………	+45·04	2 37 34·82
	Sun 2 Limb	34·6	48·7	2·2	16·1	30·0	39 2·32	− 0·38	………	+45·04	2 39 46·98
	α Tauri	32·7	46·5	0·4	14·3	28·0	26 0·38	− 0·38	45·02	+45·02	4 26 45·02
	α Aurigæ	30·3	49·4	8·4	27·5	46·6	4 8·44	− 0·27	44·92	+45·02	5 4 53·19
	β Tauri	56·6	11·7	26·7	41·8	56·9	15 26·74	− 0·34	44·97	+45·02	5 16 11·42
	δ Ursæ Minoris S.P.	51·0	32·0	16·5	59·5	42·5	23 16·30	− 1·65	44·77	+45·00	6 23 59·65
	α Canis Majoris	54·1	8·0	21·8	35·5	49·6	37 21·80	− 0·49	45·02	+45·00	6 38 6·31
	α Ursæ Minoris S.P.	6·5	18·5	32·5	46·5	0·5	0 32·90	− 3·28	47·05	+44·92	13 1 14·54
	ε Bootis	48·2	3·2	18·1	33·2	48·1	37 18·16	− 0·34	45·00	+44·90	14 38 2·72
	α^2 Libræ	53·0	6·8	20·6	34·4	48·1	41 20·58	− 0·49	44·92	+44·90	14 42 4·99
	Jupiter 1 Limb	……	……	22·2	……	49·8	47 22·28	− 0·49	………	+44·90	14 48 6·69
	Jupiter 2 Limb	……	11·8	……	39·3	……	47 25·55	− 0·49	………	+44·90	14 48 9·96
	Vesta	15·1	28·8	42·2	55·7	9·3	5 42·22	− 0·47	………	+44·88	16 6 26·63
May 17	(*a*) α Canis Majoris	58·0	11·7	25·7	39·5	53·4	37 25·66	− 0·21	40·73	+40·68	6 38 6·13†
	α Geminorum follow.	12·0	27·5	43·4	59·2	15·0	23 43·42	− 0·09	40·62	+40·67	7 24 24·00†
	α Canis Minoris	49·0	2·2	15·5	29·0	42·3	30 15·60	− 0·15	40·67	+40·67	7 30 56·12†
	β Geminorum	21·4	36·5	51·5	6·5	21·6	34 51·50	− 0·09	40·66	+40·67	7 35 32·08†
	α Ursæ Minoris S.P.	21·0	31·0	47·0	56·0	12·0	0 45·40	− 1·15	40·32	+40·60	13 1 24·85†
	α Bootis	16·2	30·2	44·4	58·7	13·0	7 44·50	− 0·11	40·36	+40·36	14 8 24·75
May 18	α Geminorum follow.	12·6	28·4	44·0	59·7	15·5	23 44·04	− 0·09	39·99	+40·16	7 24 24·11
	α Coronæ Borealis	47·9	2·9	17·8	32·9	47·7	27 17·84	− 0·10	40·07	+40·08	15 27 57·82
	α Serpentis	19·6	33·0	46·2	59·7	13·1	35 46·32	− 0·15	40·16	+40·08	15 36 26·25
	Vesta	43·6	57·2	10·6	24·2	37·7	51 10·66	− 0·19	………	+40·08	15 51 50·55

(*a*) During the last fortnight there has been an unusual extent of cloudy weather, preventing observations being made.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
May 18	β¹ Scorpii	3·5	17·6	31·5	45·8	59·8	55 31·64	− 0·22	+40·18	+40·08	15 56 11·50
	δ Ophiuchi	54·4	7·7	21·1	34·4	47·6	5 21·04	− 0·17	40·01	+40·08	16 6 0·95
May 19	Sun 1 Limb	50·6	4·7	18·7	32·9	47·0	43 18·78	− 0·08	....	+40·04	3 43 58·74
	Sun 2 Limb	5·2	19·4	33·5	47·7	1·8	45 33·52	− 0·08	....	+40·04	3 46 13·48
	α Coronæ Borealis	48·1	3·0	17·8	32·8	47·8	27 17·90	− 0·09	40·01	+40·01	15 27 57·82
	Venus 2 Limb	......	......	50·4	4·5	18·5	37 50·72	− 0·08	....	+39·97	2 38 30·61
May 20	Sun 1 Limb	49·6	4·0	18·1	32·3	46·4	47 18·08	− 0·08	....	+39·97	3 47 57·97
	Sun 2 Limb	4·7	18·8	33·1	47·3	1·4	49 33·06	− 0·08	....	+39·97	3 50 12·95
	α Canis Majoris	58·7	12·5	26·3	40·2	54·1	37 26·36	− 0·09	39·89	+39·96	6 38 6·23
	α Canis Minoris	49·5	2·8	16·2	29·5	42·7	30 16·14	− 0·08	40·04	+39·95	7 30 56·01
	12 Canum Venat.	20·8	37·9	55·1	12·4	29·5	47 55·14	− 0·10	39·93	+39·94	12 48 34·98
	α Ursæ Minoris S.P.	18·0	31·0	44·5	56·5	10·5	0 44·10	+ 3·75	38·56	+39·94	13 1 27·79
	η Bootis	58·8	12·8	26·8	41·0	55·1	46 26·90	− 0·07	39·92	+39·94	13 47 6·77
	Jupiter 1 Limb	......	25·2	......	52·6	......	38 38·90	− 0·09	....	+39·93	14 39 18·74
	Jupiter 2 Limb	......	......	41·8	......	9·4	38 41·92	− 0·09	....	+39·93	14 39 21·76
	α Coronæ Borealis	48·1	3·1	18·1	33·0	47·8	27 18·02	− 0·09	39·90	+39·93	15 27 57·86
	α Serpentis	19·7	33·1	46·4	59·8	13·3	35 46·46	− 0·08	39·97	+39·93	15 36 26·31
	Vesta	44·2	57·5	11·2	24·6	38·1	49 11·12	− 0·08	....	+39·93	15 49 50·97
	Mercury 2 Limb	37·7	51·5	5·3	18·9	32·5	31 5·18	− 0·07	....	+39·91	2 31 45·02
	Venus 2 Limb	9·7	23·6	37·3	51·1	4·8	42 37·30	− 0·08	....	+39·91	2 43 17·13
May 21	Sun 1 Limb	49·3	3·7	18·0	32·2	46·4	51 17·92	− 0·08	....	+39·90	3 51 57·74
	Sun 2 Limb	4·7	18·8	33·1	47·3	1·5	53 33·08	− 0·08	....	+39·90	3 54 12·90
	α Aurigæ	35·3	54·1	13·3	32·4	51·4	4 13·30	− 0·11	39·90	+39·90	5 4 53·09
	β Tauri	1·4	16·5	31·6	46·7	1·8	15 31·60	− 0·08	39·85	+39·90	5 16 11·42
	α Geminorum follow.	12·6	28·4	44·2	59·9	15·6	23 44·14	− 0·09	39·87	+39·90	7 24 23·95
	α Ursæ Minoris S.P.	15·0	28·0	44·0	55·0	8·5	0 42·10	+ 3·75	41·20	+39·90	13 1 25·75
	Jupiter 1 Limb	44·2	......	11·6	......	39·0	38 11·60	− 0·09	....	+39·91	14 38 51·42
	Jupiter 2 Limb	......	1·1	......	28·4	......	38 14·75	− 0·09	....	+39·91	14 38 54·57
	α Coronæ Borealis	48·1	2·8	18·0	33·0	48·0	27 17·98	− 0·09	39·94	+39·91	15 27 57·80
	α Serpentis	19·8	33·2	46·5	0·0	13·2	35 46·54	− 0·08	39·90	+39·91	15 36 26·37
	Vesta	44·7	58·2	11·6	25·1	38·6	48 11·64	− 0·08	....	+39·91	15 48 51·47
	Mercury 2 Limb	53·7	7·4	21·0	34·8	48·5	37 21·08	− 0·07	....	+39·95	2 38 0·96
	Venus 2 Limb	56·7	10·5	24·4	38·3	51·9	47 24·36	− 0·08	....	+39·95	2 48 4·23
May 22	Sun 1 Limb	50·0	4·2	18·2	32·6	46·7	55 18·34	− 0·08	....	+39·95	3 55 58·21
	Sun 2 Limb	5·4	19·5	33·7	48·0	2·2	57 33·76	− 0·08	....	+39·95	3 58 13·63
	α Aurigæ	35·2	54·2	13·1	32·3	51·2	4 13·20	− 0·11	40·01	+39·96	5 4 53·05
	α Canis Minoris	49·4	2·8	16·2	29·6	43·0	30 16·20	− 0·08	39·97	+39·97	7 30 56·09
	β Geminorum	22·1	37·1	52·2	7·4	22·4	34 52·24	− 0·08	39·87	+39·97	7 35 32·13
	12 Canum Venat.	20·7	37·8	55·0	12·2	29·4	47 55·02	− 0·10	40·03	+39·99	12 48 34·91
	α Ursæ Minoris S.P.	16·0	29·5	44·5	57·0	9·0	0 43·20	+ 3·75	40·76	+39·99	13 1 26·94
	Jupiter 2 Limb	20·2	......	......	......	14·9	37 47·55	− 0·09	....	+40·00	14 38 27·46
May 23	12 Canum Venat.	20·8	37·8	54·9	12·3	29·3	47 55·02	− 0·19	40·10	+40·12	12 48 34·95
	α Ursæ Minoris S.P.	22·0	33·5	49·0	1·0	14·5	0 48·00	+ 0·25	40·11	+40·12	13 1 28·37
	α Bootis	16·3	......	44·8	59·2	......	7 44·81	− 0·20	40·13	+40·12	14 8 24·73
May 24	Moon 2 Limb	19·6	33·3	47·0	0·7	14·4	55 47·00	− 0·25	....	+40·05	22 56 26·80
	γ Piscium	47·2	0·5	13·8	27·1	40·4	8 13·80	− 0·24	....	+40·05	23 8 53·61
May 25	Sun 1 Limb	54·7	9·1	......	......	51·6	7 23·22	− 0·20	....	+40·04	4 8 3·06
	Sun 2 Limb	......	24·7	38·8	53·2	7·6	9 38·94	− 0·20	....	+40·04	4 10 18·78
	α Geminorum follow.	12·5	28·4	44·2	59·9	15·7	23 44·14	− 0·20	39·96	+40·04	7 24 23·98
	α Canis Minoris	49·6	2·9	16·3	29·6	42·9	30 16·26	− 0·23	40·04	+40·04	7 30 56·07
	β Geminorum	21·9	37·0	52·2	7·2	22·4	34 52·14	− 0·20	40·07	+40·04	7 35 31·98

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
May 25	α Ursæ Minoris S.P.	......	......	......	3·0	16·0	0 50·05	+ 0·25	+39·39	+40·02	13 1 30·32†
	Jupiter 1 Limb	......	12·6	......	39·9	......	37 26·25	− 0·28	....	+40·01	14 38 5·98
	Jupiter 2 Limb	1·8	......	29·3	......	56·6	37 29·23	− 0·28	....	+40·01	14 38 8·96
	α^2 Libræ	57·8	11·7	25·5	39·2	52·8	41 25·40	− 0·28	40·05	+40·01	14 42 5·13
	α Serpentis	19·8	33·3	46·6	59·9	13·4	35 46·60	− 0·23	40·02	+40·00	15 36 26·37
	Vesta	47·6	0·9	14·4	27·8	41·5	44 14·44	− 0·26	....	+40·00	15 44 54·18
May 26	β Tauri	1·5	16·6	31·7	46·8	2·0	15 31·72	− 0·20	39·88	+39·93	5 16 11·45
	α Orionis	24·6	38·0	51·3	4·8	18·2	45 51·38	− 0·23	39·99	+39·92	5 46 31·07
	α Canis Majoris	59·0	12·8	26·4	40·4	54·3	37 26·58	− 0·28	39·84	+39·92	6 38 6·22
	α Ursæ Minoris S.P.	23·0	36·5	50·5	4·0	16·5	0 50·10	+ 0·25	40·02	+39·88	13 1 30·23
	Jupiter 1 Limb	33·3	......	0·8	......	28·0	36 0·70	− 0·28	....	+39·87	14 36 40·29
	Jupiter 2 Limb	......	50·2	......	17·6	......	36 3·90	− 0·28	....	+39·87	14 36 43·49
	α Coronæ Borealis	48·3	3·1	18·1	33·1	48·2	27 18·16	− 0·20	39·89	+39·86	15 27 57·82
	α Serpentis	19·9	33·4	46·7	0·1	13·4	35 46·70	− 0·23	39·92	+39·86	15 36 26·33
	Vesta	49·1	2·6	16·1	29·7	43·1	43 16·12	− 0·26	....	+39·86	15 43 55·72
	⁎ D. + 3° 2′	14·8	28·2	41·5	54·9	8·2	39 41·52	− 0·23	....	+39·86	16 40 21·15
	Saturn 1 Limb Ring	19·0	......	47·8	......	16·3	13 47·70	− 0·29	....	+39·85	17 14 27·26
	Saturn 2 Limb Ring	......	36·4	......	5·1	......	13 50·75	− 0·29	....	+39·85	17 14 30·31
May 27	Sun 1 Limb	......	......	......	43·8	58·0	15 29·44	− 0·20	....	+39·78	4 16 9·02
	Sun 2 Limb	16·7	31·0	45·4	59·7	13·8	17 45·32	− 0·20	....	+39·78	4 18 24·90
	α Aurigæ	......	54·5	13·5	32·6	......	4 13·54	− 0·18	39·78	+39·78	5 4 53·14
May 28	Sun 1 Limb	4·3	18·7	33·1	47·4	1·7	19 33·04	− 0·20	....	+39·77	4 20 12·61
	Sun 2 Limb	20·4	34·7	49·1	3·6	17·8	21 49·12	− 0·20	....	+39·77	4 22 28·69
	β Leonis	48·7	2·6	16·4	30·2	43·8	40 16·34	− 0·21	39·68	+39·76	11 40 55·89
	12 Canum Venat	21·1	38·2	55·4	12·5	29·6	47 55·36	− 0·19	39·70	+39·76	12 48 34·93
	α Ursæ Minoris S.P.	25·5	38·0	51·5	4·0	17·5	0 51·30	+ 0·25	40·21	+39·76	13 1 31·31
	η Bootis	59·1	13·2	27·1	41·2	55·3	46 27·18	− 0·20	39·74	+39·76	13 47 6·74
	α Bootis	16·8	31·1	45·2	59·2	13·3	7 45·12	− 0·20	39·81	+39·76	14 8 24·68
	Jupiter 1 Limb	......	57·7	......	25·1	......	35 11·40	− 0·28	....	+39·76	14 35 50·88
	Jupiter 2 Limb	46·8	......	14·4	......	41·7	35 14·30	− 0·28	....	+39·76	14 35 53·78
	α Coronæ Borealis	48·3	3·1	18·2	33·3	48·1	27 18·20	− 0·20	39·86	+39·76	15 27 57·76
	⁎ D. + 3° 2′	14·8	28·2	41·7	55·2	8·3	39 41·64	− 0·23	....	+39·76	16 40 21·17
	Saturn 1 Limb Ring	......	......	......	25·8	......	13 11·52	− 0·29	....	+39·76	17 13 50·99
	Saturn 2 Limb Ring	45·7	......	14·3	......	42·8	13 14·27	− 0·29	....	+39·76	17 13 53·74
	Venus 2 Limb	58·4	12·5	26·4	40·4	54·4	21 26·42	− 0·21	....	+39·75	3 22 5·96
	Mercury 2 Limb	54·5	8·6	22·4	36·5	50·6	26 22·52	− 0·20	....	+39·75	3 27 2·07
May 29	Sun 1 Limb	8·6	22·8	37·1	51·4	5·9	23 37·16	− 0·20	....	+39·75	4 24 16·71
	Sun 2 Limb	24·7	39·1	53·4	7·8	22·2	25 53·44	− 0·20	....	+39·75	4 26 32·99
	β Geminorum	22·3	37·5	52·5	7·7	22·8	34 52·56	− 0·20	39·63	+39·75	7 35 32·11
	α Ursæ Minoris S.P.	......	......	51·0	3·5	17·0	0 50·87	+ 0·25	41·35	+39·75	13 1 30·87
	η Bootis	59·1	13·1	27·1	41·2	55·3	46 27·16	− 0·20	39·75	+39·75	13 47 6·71
	α Bootis	16·8	31·0	45·2	59·3	13·2	7 45·10	− 0·20	39·82	+39·76	14 8 24·66
	Jupiter 1 Limb	20·0	......	47·2	......	14·8	34 47·33	− 0·28	....	+39·76	14 35 26·81
	Jupiter 2 Limb	......	36·5	......	4·7	......	34 50·60	− 0·28	....	+39·76	14 35 30·08
	α Coronæ Borealis	48·4	3·4	18·2	33·2	48·1	27 18·26	− 0·20	39·81	+39·77	15 27 57·83
	α Serpentis	20·1	33·5	47·0	0·2	13·6	35 46·88	− 0·23	39·76	+39·77	15 36 26·42
	Vesta	57·0	10·6	24·1	37·7	51·0	40 24·08	− 0·26	....	+39·77	15 41 3·59
	⁎ D + 3° 2′	14·7	28·4	41·6	55·0	8·2	39 41·58	− 0·23	....	+39·78	16 40 21·13
	Saturn 1 Limb Ring	24·2	......	52·9	......	21·5	12 52·87	− 0·29	....	+39·78	17 13 32·36
	Saturn 2 Limb Ring	......	41·7	......	10·2	......	12 55·95	− 0·29	....	+39·78	17 13 35·44
May 30	α Ursæ Minoris S.P.	......	......	54·0	5·5	19·5	0 53·37	+ 0·25	39·55	+39·93	13 1 33·55
	α Virginis	42·1	55·7	9·1	22·7	36·2	16 9·16	− 0·26	39·90	+39·93	13 16 48·83
	η Bootis	58·8	12·8	27·0	41·2	55·1	46 26·98	− 0·20	39·93	+39·93	13 47 6·71

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
May 30	α Bootis	16·8	30·9	45·0	59·1	13·1	7 44·98	− 0·20	+39·94	+39·94	14 8 24·72
	Jupiter 1 Limb	......	9·8	......	37·2	......	34 23·50	− 0·28	....	+39·94	14 35 3·16
	Jupiter 2 Limb	59·1	......	26·5	......	53·9	34 26·50	− 0·28	....	+39·94	14 35 6·16
	α Coronæ Borealis	48·1	3·2	18·1	33·1	48·0	27 18·10	− 0·20	39·97	+39·94	15 27 57·84
	α Serpentis	20·0	33·3	46·6	0·1	13·4	35 46·68	− 0·23	39·97	+39·94	15 36 26·39
	Vesta	1·0	14·6	28·0	41·6	55·1	39 28·06	− 0·26	....	+39·94	15 40 7·74
	Saturn 1 Limb Ring	5·8	......	......	......	......	12 34·35	− 0·29	....	+39·95	17 13 14·01
	Saturn 2 Limb Ring	......	22·5	......	......	......	12 36·78	− 0·29	....	+39·95	17 13 16·44
June 1	Sun 2 Limb	39·8	54·0	......	......	37·2	38 8·46	− 0·20	....	+39·99	4 38 48·25
	δ Leonis	29·2	43·5	57·7	12·0	26·4	4 57·76	− 0·20	39·95	+40·00	11 5 37·56
	12 Canum Venat.	20·9	37·9	55·1	12·4	29·6	47 55·18	− 0·19	39·83	+40·00	12 48 34·99
	α Ursæ Minoris S.P.	30·5	42·0	......	......	22·5	0 56·03	+ 0·25	38·33	+40·00	13 1 36·28
		INSTRUMENT REVERSED.									
	η Bootis	58·5	12·6	26·5	40·6	54·7	46 26·58	− 0·10	40·22	+40·00	13 47 6·48
	Venus 2 Limb	49·0	3·1	17·0	30·9	45·4	41 17·08	− 0·10	....	+39·99	3 41 56·97
	Mercury 2 Limb	13·2	27·4	41·5	55·6	10·0	58 41·54	− 0·10	....	+39·99	3 59 21·43
June 2	Sun 1 Limb	28·9	43·2	57·6	12·0	26·6	39 57·66	− 0·09	....	+39·99	4 40 37·56
	Sun 2 Limb	45·5	59·8	14·4	28·7	43·3	42 14·34	− 0·09	....	+39·99	4 42 54·24
	α Aurigæ	34·9	53·9	13·0	32·1	51·3	4 13·04	+ 0·02	40·15	+39·99	5 4 53·05
	(*a*) α Ursæ Minoris S.P.	......	......	55·0	9·5	21·0	0 55·63	+ 0·47	39·25	+39·98	13 1 36·08
	α Virginis	41·6	55·0	8·6	22·1	35·6	16 8·58	+ 0·22	39·98	+39·98	13 16 48·78
	η Bootis	58·4	12·5	26·6	40·6	54·7	46 26·56	+ 0·17	39·96	+39·98	13 47 6·71
	α Bootis	16·3	30·3	44·5	58·6	12·8	7 44·50	+ 0·17	40·04	+39·98	14 8 24·65
	Jupiter 1 Limb	47·7	......	15·0	......	42·3	33 15·00	+ 0·23	....	+39·97	14 33 55·20
	Jupiter 2 Limb	......	4·2	......	31·9	......	33 18·05	+ 0·23	....	+39·97	14 33 58·25
	ε Bootis	52·8	7·7	22·9	37·8	52·8	37 22·80	+ 0·15	39·93	+39·97	14 38 2·92
	α Coronæ Borealis	48·0	2·9	17·9	32·8	47·8	27 17·88	+ 0·16	39·83	+39·97	15 27 58·01
	Vesta	18·6	32·0	45·6	59·1	12·6	36 45·58	+ 0·22	....	+39·97	15 37 25·77
	Saturn 1 Limb Ring	......	23·6	......	52·1	......	11 37·85	+ 0·25	....	+39·96	17 12 18·06
	Saturn 2 Limb Ring	12·3	......	40·8	......	9·3	11 40·80	+ 0·25	....	+39·96	17 12 21·01
	Mercury 2 Limb	47·0	1·4	15·7	29·8	44·2	7 15·62	+ 0·17	....	+39·92	4 7 55·71
June 3	Sun 1 Limb	34·6	49·1	3·7	18·0	32·4	44 3·56	+ 0·17	....	+39·92	4 44 43·65
	Sun 2 Limb	51·8	6·1	20·6	35·1	49·3	46 20·58	+ 0·17	....	+39·92	4 47 0·67
	α Aurigæ	35·0	53·9	13·1	32·2	51·4	4 13·12	+ 0·13	39·98	+39·92	5 4 53·17
	α Canis Minoris	49·3	2·7	16·0	29·3	42·6	30 15·98	+ 0·19	39·86	+39·91	7 30 56·08
	Moon 1 Limb	46·8	1·2	16·2	31·2	46·1	9 16·30	+ 0·18	....	+39·91	8 9 56·39
	12 Canum Venat.	20·6	37·7	54·8	11·9	29·1	47 54·82	+ 0·14	39·84	+39·89	12 48 34·85
	α Ursæ Minoris S.P.	29·0	42·5	55·0	10·5	22·0	0 55·80	+ 0·47	39·81	+39·89	13 1 36·16
	α Bootis	16·4	30·4	44·6	58·7	12·8	7 44·58	+ 0·17	39·95	+39·89	14 8 24·64
	Jupiter 1 Limb	......	39·8	......	7·2	......	32 53·50	+ 0·23	....	+39·89	14 33 33·62
	Jupiter 2 Limb	29·0	......	56·5	......	23·9	32 56·47	+ 0·23	....	+39·89	14 33 36·59
	Vesta	26·6	40·1	53·7	7·2	20·6	35 53·64	+ 0·22	....	+39·89	15 36 33·75
	δ Ophiuchi	54·2	7·6	21·0	34·3	47·7	5 20·96	+ 0·21	39·88	+39·88	16 6 1·05
	Saturn 1 Limb Ring	50·8	......	19·2	......	47·8	11 19·27	+ 0·25	....	+39·88	17 11 59·40
	Saturn 2 Limb Ring	......	7·9	......	36·8	......	11 22·35	+ 0·25	....	+39·88	17 12 2·48
June 4	β Geminorum	21·8	36·9	52·0	7·0	22·2	34 51·98	+ 0·15	39·83	+39·83	7 35 31·96
June 7	υ Leonis	40·8	54·1	7·5	20·7	34·0	28 7·42	+ 0·20	....	+39·72	11 28 47·34
	Moon 1 Limb	17·4	31·0	44·6	58·2	11·8	38 44·60	+ 0·20	....	+39·72	11 39 24·52
	β Leonis	48·4	2·0	15·7	29·6	43·4	40 15·82	+ 0·18	39·71	+39·72	11 40 55·72

(*a*) At 9^h western end of axis moved in azimuth 0^s. 44 to south.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
June 7	η Virginis	39·2	52·2	5·7	18·8	32·2	11 5·62	+ 0·20	....	+39·72	12 11 45·54
	12 Canum Venat.	20·6	37·7	54·8	12·0	29·2	47 54·86	+ 0·14	+39·75	+39·72	12 48 34·72
	α Ursæ Minoris S.P.	33·0	45·5	58·0	12·5	27·0	0 59·20	+ 0·47	39·43	+39·72	13 1 39·39
	α Virginis	41·7	55·4	8·9	22·4	35·7	16 8·82	+ 0·22	39·72	+39·72	13 16 48·76
	η Bootis	58·7	12·7	26·8	40·8	54·9	46 26·78	+ 0·17	39·72	+39·71	13 47 6·66
	Venus 2 Limb	8·8	22·8	37·3	51·6	5·7	11 37·24	+ 0·17	....	+39·60	4 12 17·01
June 8	Sun 1 Limb	10·8	25·3	39·8	54·1	8·8	4 39·76	+ 0·16	....	+39·59	5 5 19·51
	Sun 2 Limb	28·1	42·5	57·1	11·7	26·1	6 57·10	+ 0·16	....	+39·59	5 7 36·85
	12 Canum Venat.	20·8	38·0	55·1	12·2	29·4	47 55·10	+ 0·14	39·49	+39·53	12 48 34·77
	α Ursæ Minoris S.P.	......	48·0	0·0	15·0	28·0	1 1·32	+ 0·47	38·08	+39·53	13 1 41·32
	η Bootis	58·7	12·8	26·9	41·0	55·1	46 26·90	+ 0·17	39·60	+39·52	13 47 6·59
	Jupiter 1 Limb	46·9	......	13·9	......	41·5	31 14·10	+ 0·23	....	+39·52	14 31 53·85
	Jupiter 2 Limb	......	3·3	......	30·5	......	31 16·90	+ 0·23	....	+39·52	14 31 56·65
	ε Bootis	53·1	8·1	23·0	38·2	53·2	37 23·12	+ 0·15	39·58	+39·52	14 38 2·79
	α^2 Libræ	57·8	11·5	25·4	39·2	53·1	41 25·40	+ 0·23	39·56	+39·52	14 42 5·15
	α Coronæ Borealis	48·5	3·5	18·4	33·2	48·2	27 18·36	+ 0·16	39·36	+39·51	15 27 58·03
	Vesta	25·7	39·2	52·7	6·3	20·0	31 52·78	+ 0·22	....	+39·51	15 32 32·51
June 10	Sun 1 Limb	27·2	41·8	56·3	10·8	25·4	12 56·30	+ 0·16	....	+39·30	5 13 35·76
	Sun 2 Limb	44·7	59·1	13·7	28·2	42·7	15 13·68	+ 0·16	....	+39·30	5 15 53·14
	α Ursæ Minoris S.P.	......	......	2·5	15·0	28·5	1 2·50	+ 0·47	38·44	+39·26	13 1 42·23
	α Virginis	42·3	55·7	9·3	22·8	36·2	16 9·26	+ 0·22	39·26	+39·26	13 16 48·74
	89 Virginis	6·6	......	......	48·3	2·2	40 34·39	+ 0·23	....	+39·25	13 41 13·87
	η Bootis	59·1	13·0	27·2	41·4	55·4	46 27·22	+ 0·17	39·26	+39·25	13 47 6·64
	Moon 1 Limb	18·0	32·2	46·7	1·0	15·2	56 46·62	+ 0·25	....	+39·25	13 57 26·12
	α Bootis	16·8	31·0	45·2	59·2	13·4	7 45·12	+ 0·17	39·38	+39·25	14 8 24·54
	λ Virginis	23·7	37·2	50·8	4·4	18·2	9 50·86	+ 0·23	....	+39·25	14 10 30·34
	Jupiter 1 Limb	......	24·7	......	52·0	......	30 38·35	+ 0·23	....	+39·25	14 31 17·83
	Jupiter 2 Limb	14·2	......	41·4	......	8·8	30 41·47	+ 0·23	....	+39·25	14 31 20·95
	ε Bootis	53·4	8·4	23·4	38·4	53·3	37 23·38	+ 0·15	39·31	+39·25	14 38 2·78
	α Coronæ Borealis	48·8	3·7	18·6	33·6	48·6	27 18·66	+ 0·16	39·06	+39·24	15 27 58·06
	Vesta	58·5	12·1	25·7	39·3	52·8	30 25·68	+ 0·22	....	+39·24	15 31 5·14
	Saturn 1 Limb Ring	39·1	......	7·8	......	36·2	9 7·70	+ 0·25	....	+39·22	17 9 47·17
	Saturn 2 Limb Ring	......	56·5	......	24·8	......	9 10·65	+ 0·25	....	+39·22	17 9 50·12
	Venus 2 Limb	33·5	47·6	1·8	16·2	30·6	27 1·94	+ 0·17	....	+39·11	4 27 41·22
June 11	Sun 1 Limb	36·1	50·6	5·2	19·5	34·0	17 5·08	+ 0·16	....	+39·10	5 17 44·34
	Sun 2 Limb	53·6	8·0	22·4	37·0	51·4	18 22·48	+ 0·16	....	+39·10	5 20 1·74
June 13	α Canis Minoris	50·5	3·8	17·2	30·5	44·0	30 17·20	+ 0·19	38·65	+38·61	7 30 56·00
	12 Canum Venat	21·5	38·7	55·8	13·0	30·2	47 55·84	+ 0·14	38·68	+38·56	12 48 34·54
	α Ursæ Minoris S.P.	39·0	52·0	5·0	19·0	31·5	1 5·30	+ 0·47	37·98	+38·55	13 1 44·32
	α Bootis	17·7	31·6	45·8	0·0	14·1	7 45·84	+ 0·17	38·64	+38·55	14 8 24·56
	Jupiter 1 Limb	22·8	......	50·2	......	17·7	29 50·23	+ 0·23	....	+38·54	14 30 29·00
	Jupiter 2 Limb	......	39·3	......	6·8	......	29 53·05	+ 0·23	....	+38·54	14 30 31·82
	ε Bootis	54·2	9·3	24·2	39·3	54·3	37 24·26	+ 0·15	38·42	+38·54	14 38 2·95
	Vesta	1·4	14·8	28·3	41·7	55·2	28 28·28	+ 0·22	....	+38·54	15 29 7·04
	α Serpentis	21·2	34·6	47·8	1·3	14·6	35 47·90	+ 0·19	38·37	+38·53	15 36 26·62
	σ Scorpii	......	......	......	7·8	22·6	10 53·18	+ 0·26	....	+38·53	16 11 31·97
	α Scorpii	31·8	46·4	1·2	15·9	30·8	19 1·22	+ 0·26	38·52	+38·53	16 19 40·01
	Moon 1 Limb	25·4	40·8	56·3	11·8	27·3	29 56·32	+ 0·28	....	+38·53	16 30 35·13
June 14	ε Bootis	54·3	9·3	24·2	39·4	54·4	37 24·32	+ 0·15	38·35	+38·36	14 38 2·83
	α^2 Libræ	59·1	12·8	26·6	40·4	54·2	41 26·62	+ 0·23	38·33	+38·36	14 42 5·21
	Vesta	24·5	38·1	51·6	5·2	18·8	27 51·64	+ 0·22	....	+38·36	15 28 30·22
	α Serpentis	21·1	34·6	48·0	1·3	14·7	35 47·94	+ 0·19	38·33	+38·36	15 36 26·49
	α Scorpii	31·7	46·7	1·3	16·1	30·9	19 1·34	+ 0·26	38·41	+38·35	16 19 39·95

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
June 16	α Bootis	18·2	32·4	46·3	0·5	14·7	7 46·42	+ 0·17	+38·04	+37·97	14 8 24·56
	Vesta	17·6	30·9	44·4	58·1	11·6	26 44·52	+ 0·22	………	+37·96	15 27 22·70
	α Serpentis	21·6	35·0	48·3	1·6	14·9	35 48·28	+ 0·19	38·00	+37·96	15 36 26·43
	β^1 Scorpii	5·6	19·8	33·7	47·8	1·8	55 33·74	+ 0·24	37·87	+37·96	15 56 11·94
	δ Ophiuchi	56·2	9·5	22·9	36·2	49·6	5 22·88	+ 0·21	38·04	+37·96	16 6 1·05
	Saturn 1 Limb Ring.	……	1·8	……	30·3	……	7 16·05	+ 0·25	………	+37·94	17 7 54·24
	Saturn 2 Limb Ring.	50·7	……	19·3	……	48·0	7 19·33	+ 0·25	………	+37·94	17 7 57·52
	α Ophiuchi	28·6	42·1	55·6	9·1	22·8	26 55·64	+ 0·18	37.84	+37·93	17 27 33·75
	Pallas	1·0	15·2	29·5	43·8	58·2	56 29·54	+ 0·16	………	+37·91	18 57 7·61
June 17	Sun 1 Limb	31·8	46·2	0·8	15·1	29·4	42 0·66	+ 0·16	………	+37·74	5 42 38·56
	Sun 2 Limb	49·1	3·8	18·2	32·8	47·5	44 18·28	+ 0·16	………	+37·74	5 44 56·18
	Mercury 1 Limb	58·3	13·2	27·8	42·6	57·4	18 27·86	+ 0·16	………	+37·73	6 19 5·75
	β Geminorum	23·8	39·0	54·2	9·2	24·2	34 54·08	+ 0·15	37·74	+37·71	7 35 31·94
	12 Canum Venat.	22·6	39·6	56·7	13·9	31·1	47 56·78	+ 0·14	37·68	+37·63	12 48 34·55
	α Ursæ Minoris S.P.	45·0	57·0	9·0	23·0	……	1 9·92	+ 0·47	36·55	+37·63	13 1 48·02
	η Bootis	0·8	14·7	28·8	42·8	56·9	46 28·80	+ 0·17	37·63	+37·62	13 47 6·59
	Vesta	46·7	0·2	13·7	27·2	40·7	26 13·70	+ 0·22	………	+37·59	15 26 51·51
	α Serpentis	21·9	35·3	48·7	2·1	15·5	35 48·70	+ 0·19	37·58	+37·59	15 36 26·48
	Saturn 1 Limb Ring.	29·5	……	58·1	……	26·6	6 58·07	+ 0·25	………	+37·57	17 7 35·89
	Saturn 2 Limb Ring.	……	46·7	……	15·2	……	7 0·95	+ 0·25	………	+37·57	17 7 38·77
	α Ophiuchi	28·8	42·4	56·0	9·6	23·4	26 56·04	+ 0·18	37·45	+37·56	17 27 33·78
	δ Ursæ Minoris	1·0	44·5	29·0	11·0	54·5	23 28·00	− 0·07	37·36	+37·55	18 24 5·48
June 18	Sun 1 Limb	41·5	55·9	10·6	25·0	39·7	46 10·54	+ 0·16	………	+37·38	5 46 48·08
	Sun 2 Limb	59·1	13·7	28·2	……	……	48 28·18	+ 0·16	………	+37·38	5 49 5·72
	Mercury 1 Limb	13·8	28·7	43·4	……	……	27 43·39	+ 0·16	………	+37·37	6 28 20·92
	12 Canum Venat.	23·0	……	……	14·4	……	47 57·26	+ 0·14	37·18	+37·28	12 48 34·68
	α Ursæ Minoris S.P.	44·0	……	8·5	……	35·5	1 9·43	+ 0·47	37·84	+37·27	13 1 47·17
	Jupiter 1 Limb	……	28·2	……	55·8	……	28 42·00	+ 0·23	………	+37·26	14 29 19·49
	Jupiter 2 Limb	17·5	……	44·8	……	12·2	28 44·83	+ 0·23	………	+37·26	14 29 22·32
	ε Bootis	55·6	10·4	25·2	40·3	55·4	37 25·38	+ 0·15	37·27	+37·25	14 38 2·78
	α^2 Libræ	0·1	13·8	27·6	41·4	55·2	41 27·62	+ 0·23	37·32	+37·25	14 42 5·10
June 19	Sun 1 Limb	51·4	5·8	……	……	49·5	50 20·41	+ 0·16	………	+37·07	5 50 57·64
	Sun 2 Limb	8·8	23·4	37·8	52·6	7·0	52 37·92	+ 0·16	………	+37·07	5 53 15·15
	α Geminorum follow.	15·3	30·7	46·6	2·4	18·2	23 46·64	+ 0·15	37·09	+37·05	7 24 23·84
	α Ursæ Minoris S.P.	……	57·5	……	……	……	1 10·20	+ 0·47	37·88	+36·98	13 1 47·65
	η Bootis	1·4	15·3	29·4	43·5	57·6	46 29·44	+ 0·17	36·97	+36·97	13 47 6·58
	Jupiter 1 Limb	3·1	……	30·2	……	57·7	28 30·33	+ 0·23	………	+36·96	14 29 7·52
	Jupiter 2 Limb	……	19·6	……	46·8	……	28 33·20	+ 0·23	………	+36·96	14 29 10·39
	ε Bootis	55·6	10·6	25·7	40·7	55·7	37 25·66	+ 0·15	36·98	+36·96	14 38 2·77
	Vesta	50·3	3·8	17·5	30·9	44·6	25 17·42	+ 0·22	………	+36·95	15 25 54·59
	α Serpentis	22·5	35·8	49·4	2·7	15·9	35 49·26	+ 0·19	37·02	+36·95	15 36 26·40
	Saturn 1 Limb Ring.	……	7·4	……	36·1	……	6 21·75	+ 0·25	………	+36·93	17 6 58·93
	Saturn 2 Limb Ring.	56·2	……	24·9	……	53·4	6 24·83	+ 0·25	………	+36·93	17 7 2·01
	δ Ursæ Minoris	2·5	46·0	30·0	13·0	56·5	23 29·60	− 0·07	35·71	+36·92	18 24 6·45
	β Lyræ	4·8	20·6	36·2	52·2	8·1	43 36·38	+ 0·14	36·78	+36·92	18 44 13·44
	Pallas	43·5	57·8	12·2	26·6	41·0	54 12·22	+ 0·16	………	+36·91	18 54 49·29
June 20	Sun 1 Limb	……	……	……	……	59·1	54 30·07	+ 0·16	………	+36·78	5 55 7·01
	Sun 2 Limb	18·8	33·1	47·7	2·2	16·8	56 47·72	+ 0·16	………	+36·78	5 57 24·66
	α Canis Minoris	52·6	5·8	19·2	32·5	45·8	30 19·18	+ 0·19	36·70	+36·76	7 30 56·13
	β Geminorum	24·8	39·9	55·1	10·2	25·3	34 55·06	+ 0·15	36·77	+36·76	7 35 31·97
	α Coronæ Borealis	51·2	5·8	20·9	35·8	50·8	27 20·90	+ 0·16	36·78	+36·67	15 27 57·73
	α Serpentis	22·7	36·2	49·7	3·0	16·6	35 49·64	+ 0·19	36·64	+36·67	15 36 26·50
	δ Ursæ Minoris	3·0	46·0	30·5	13·0	56·0	23 29·70	− 0·07	35·58	+36·64	18 24 6·27
	β Lyræ	4·8	20·7	36·4	52·5	8·3	43 36·54	+ 0·14	36·63	+36·64	18 44 13·32

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
June 20	Pallas	56·5	10·8	25·2	39·6	53·9	53 25·20	+ 0·16	········	+36·64	18 54 2·00
June 22	Sun 1 Limb	20·6	35·1	49·7	4·1	18·6	2 49·62	+ 0·16	········	+36·27	6 3 26·05
	Sun 2 Limb	38·3	52·7	7·2	21·8	36·4	5 7·28	+ 0·16	········	+36·27	6 5 43·71
	α Leonis	48·4	2·0	15·6	29·3	42·8	59 15·62	+ 0·18	+36·27	+36·23	9 59 52·03
	12 Canum Venat.	23·8	41·0	58·1	15·4	32·6	47 58·18	+ 0·14	36·20	+36·20	12 48 34·52
	α Ursæ Minoris S.P.	48·5	2·0	······	27·5	39·5	1 14·30	+ 0·47	36·21	+36·20	13 1 50·97
	η Bootis	2·0	16·1	30·2	44·2	58·4	46 30·18	+ 0·17	36·20	+36·19	13 47 6·54
	Jupiter 1 Limb	······	45·7	······	13·1	······	27 59·40	+ 0·23	········	+36·18	14 28 35·81
	Jupiter 2 Limb	34·8	······	2·2	······	······	28 2·15	+ 0·23	········	+36·18	14 28 38·56
	ε Bootis	56·5	11·4	26·5	41·6	56·5	37 26·50	+ 0·15	36·11	+36·17	14 38 2·82
	Venus 2 Limb	34·9	49·6	4·2	18·8	33·3	30 4·16	+ 0·16	········	+35·96	5 30 40·28
June 23	α Ursæ Minoris S.P.	······	······	14·5	······	41·5	1 15·35	+ 0·47	35·98	+35·86	13 1 51·68
	α Virginis	45·5	59·1	12·5	26·2	39·6	16 12·58	+ 0·22	35·85	+35·85	13 16 48·65
	α Coronæ Borealis	52·0	6·7	21·7	36·7	51·8	27 21·78	+ 0·16	35·89	+35·82	15 27 57·76
	α Herculis	21·0	34·7	48·3	2·1	15·8	6 48·38	+ 0·18	35·78	+35·80	17 7 24·36
	α Ophiuchi	30·6	44·2	58·1	11·4	25·2	26 57·90	+ 0·18	35·63	+35·80	17 27 33·88
	δ Ursæ Minoris	3·5	47·0	30·0	13·0	55·5	23 29·80	− 0·07	35·35	+35·79	18 24 5·52
	β Lyræ	5·6	21·4	37·4	53·2	9·0	43 37·32	+ 0·14	35·89	+35·78	18 44 13·24
	Pallas	33·2	47·5	1·8	16·5	30·6	51 1·92	+ 0·16	········	+35·78	18 51 37·86
June 25	12 Canum Venat.	24·6	41·8	59·1	16·3	33·4	47 59·04	+ 0·14	35·29	+35·33	12 48 34·51
	α Ursæ Minoris S.P.	49·5	3·5	16·0	31·0	43·5	1 16·70	+ 0·47	36·26	+35·32	13 1 52·49
	α Bootis	21·0	34·8	49·1	3·1	17·2	7 49·04	+ 0·17	35·35	+35·31	14 8 24·52
June 27	Sun 2 Limb	26·2	41·0	······	······	24·4	25 55·37	+ 0·16	········	+34·88	6 26 30·41
June 28	Saturn 1 Limb Ring	15·4	······	43·8	······	12·3	3 43·83	+ 0·25	········	+34·51	17 4 18·59
	Saturn 2 Limb Ring	······	32·6	······	1·0	······	3 46·80	+ 0·25	········	+34·51	17 4 21·56
	α Herculis	22·0	35·5	49·7	3·4	17·1	6 49·54	+ 0·18	34·64	+34·51	17 7 24·23
	α Ophiuchi	31·8	45·3	59·1	12·4	26·2	26 58·96	+ 0·18	34·60	+34·50	17 27 33·64
	* D.+2° 9′	2·3	15·5	28·6	41·9	55·4	30 28·74	+ 0·20	········	+34·50	17 31 3·44
	α Lyræ	25·7	42·8	0·0	16·9	34·0	30 59·88	+ 0·14	34·25	+34·50	18 31 34·52
	Venus 2 Limb	40·5	55·2	9·6	24·3	38·8	2 9·68	+ 0·16	········	+34·44	6 2 44·28
June 29	Sun 1 Limb	27·0	41·6	56·1	10·5	25·0	31 56·04	+ 0·16	········	+34·44	6 32 30·64
	Sun 2 Limb	44·3	58·8	13·3	28·0	42·4	34 13·36	+ 0·16	········	+34·44	6 34 47·96
June 30	Sun 2 Limb	53·3	7·8	22·2	36·6	51·2	38 22·22	+ 0·16	········	+34·32	6 38 56·70
	α Ursæ Minoris S.P.	······	······	24·0	37·0	50·0	1 24·23	+ 0·47	32·85	+34·29	13 1 58·99
	α Bootis	21·8	35·8	50·0	4·2	18·3	7 50·02	+ 0·17	34·32	+34·29	14 8 24·48
	Jupiter 1 Limb	······	······	7·0	······	······	27 6·99	+ 0·23	········	+34·28	14 27 41·50
	Jupiter 2 Limb	······	55·8	······	23·2	······	27 9·50	+ 0·23	········	+34·28	14 27 44·01
	ε Bootis	58·2	13·3	28·4	43·3	58·3	37 28·30	+ 0·15	34·24	+34·28	14 38 2·73
	α^2 Libræ	3·1	16·7	30·6	44·3	58·1	41 30·56	+ 0·23	34·33	+34·28	14 42 5·07
	α Coronæ Borealis	53·4	8·4	23·4	38·3	53·3	27 23·36	+ 0·16	34·26	+34·28	15 27 57·80
	Saturn 1 Limb Ring	······	55·8	······	24·4	······	3 10·10	+ 0·25	········	+34·25	17 3 44·60
	Saturn 2 Limb Ring	44·7	······	13·3	······	41·8	3 13·27	+ 0·25	········	+34·25	17 3 47·77
	α Herculis	22·3	36·1	50·0	3·7	17·5	6 49·92	+ 0·18	34·26	+34·25	17 7 24·35
	δ Ursæ Minoris	4·0	46·5	30·5	14·0	57·0	23 30·40	− 0·07	34·23	+34·22	18 24 4·55
July 1	α Leonis	50·7	4·3	17·8	31·4	45·0	59 17·84	+ 0·18	34·01	+33·96	9 59 51·98
	12 Canum Venat.	26·0	43·2	0·4	17·5	34·7	48 0·36	+ 0·14	33·88	+33·91	12 48 34·41
	α Ursæ Minoris S.P.	58·5	11·5	······	······	······	1 24·15	+ 0·47	33·77	+33·90	13 1 58·52
	η Bootis	4·4	18·3	32·5	46·5	0·6	46 32·46	+ 0·17	33·84	+33·89	13 47 6·52
	α Serpentis	25·6	39·0	52·5	5·8	19·2	35 52·42	+ 0·19	33·83	+33·86	15 36 26·47
	α Herculis	22·8	36·6	50·3	4·0	17·8	6 50·30	+ 0·18	33·88	+33·83	17 7 24·31

Date.	Object Observed.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
July 1	⁎ D. + 2° 9′	2·8	16·4	29·7	42·8	56·2	30 29·58	+ 0·20	....	+33·83	17 31 3·61
	δ Ursæ Minoris	4·5	......	......	......	......	23 30·20	− 0·07	+34·33	+33·81	18 24 3·94
July 3	Venus 2 Limb	32·2	46·6	1·2	15·8	30·3	29 1·22	+ 0·16	....	+32·76	6 29 34·14
July 4	Sun 1 Limb	9·1	23·6	38·1	52·5	7·0	52 38·06	+ 0·16	....	+32·75	6 53 10·97
	Sun 2 Limb	26·2	40·6	55·2	9·6	24·1	54 55·14	+ 0·16	....	+32·75	6 55 28·05
		Instrument Reversed.									
	Mercury 1 Limb	17·8	32·0	46·3	0·4	14·6	31 46·22	− 0·05	....	+32·72	8 32 18·89
July 6	Jupiter 1 Limb	......	44·6	......	......	......	26 58·26	+ 0·03	....	+31·78	14 27 30·07
	Jupiter 2 Limb	33·3	......	0·7	......	......	27 0·66	+ 0·03	....	+31·78	14 27 32·47
	δ Ursæ Minoris	7·0	......	33·0	19·0	......	23 33·97	− 4·24	34·13	+31·71	18 24 1·44
	α Lyræ	28·6	45·7	2·7	19·8	36·8	31 2·72	− 0·14	31·74	+31·71	18 31 34·29
	β Lyræ	10·0	26·1	41·9	57·8	13·7	43 41·90	− 0·11	31·68	+31·71	18 44 13·50
July 7	Sun 1 Limb	31·5	46·1	0·5	14·8	......	5 0·44	− 0·06	....	+31·40	7 5 31·78
	12 Canum Venat	29·1	46·2	3·3	20·5	37·6	48 3·34	− 0·15	31·09	+31·25	12 48 34·44
	α Ursæ Minoris S.P.	57·5	8·5	23·0	35·0	48·0	1 22·40	+ 9·77	31·16	+31·25	13 2 3·42
	α Virginis	50·2	3·7	17·2	30·6	44·3	16 17·20	+ 0·02	31·31	+31·24	13 16 48·46
	Moon 1 Limb	53·1	7·1	21·3	35·6	49·8	40 21·38	+ 0·03	....	+31·23	13 40 52·64
	η Bootis	7·1	21·1	35·3	49·4	3·4	46 35·26	− 0·05	31·19	+31·23	13 47 6·44
	α Bootis	25·0	39·1	53·3	7·3	21·5	7 53·24	− 0·05	31·25	+31·22	14 8 24·41
	δ Ursæ Minoris	9·5	......	37·0	21·0	......	23 36·80	− 4·24	31·16	+31·13	18 24 3·69
	α Lyræ	29·2	46·3	3·2	20·2	37·3	31 3·24	− 0·14	31·22	+31·13	18 31 34·23
July 8	Venus 2 Limb	22·8	37·4	51·8	6·3	20·9	55 51·84	− 0·06	....	+30·42	6 56 22·20
July 9	Sun 1 Limb	44·0	58·4	12·8	27·2	41·6	13 12·80	− 0·06	....	+30·41	7 13 43·15
	α Ursæ Minoris S.P.	......	11·5	......	......	52·0	1 25·40	+ 9·77	29·80	+30·30	13 2 5·47
	α Bootis	25·8	40·0	54·1	8·3	22·5	7 54·14	− 0·05	30·33	+30·28	14 8 24·37
	ε Bootis	2·4	17·5	32·5	47·6	2·5	37 32·50	− 0·09	30·17	+30·27	14 38 2·68
	α Coronæ Borealis	57·6	12·5	27·5	42 6	57·5	27 27·54	− 0·08	30·24	+30·25	15 27 57·71
	α Herculis	27·0	40·6	......	8·0	21·6	6 54·30	− 0·04	30·11	+30·22	17 7 24·48
	δ Ursæ Minoris	12·5	54·5	38·0	22·0	......	23 38·25	− 4·24	29·42	+30·19	18 24 4·20
	α Lyræ	30·1	47·0	4·1	21·2	38·2	31 4·12	− 0·14	30·35	+30·19	18 31 34·17
	Venus 2 Limb	43·9	58·5	12·9	27·5	41·9	1 12·94	− 0·06	....	+29·92	7 1 42·80
July 10	Sun 1 Limb	49·6	4·0	18·6	32·8	47·2	17 18·44	− 0·06	....	+29·91	7 17 48·29
	Sun 2 Limb	6·1	20·4	35·0	49·3	3·8	19 34·92	− 0·06	....	+29·91	7 20 4·77
	α Coronæ Borealis	58·2	13·2	28·1	43·0	58·0	27 28·10	− 0·08	29·67	+29·74	15 27 57·76
	α Serpentis	29·9	43·3	56·6	10·0	23·4	35 56·64	− 0·02	29·77	+29·73	15 36 26·35
	Moon 1 Limb	15·3	30·5	......	......	......	11 45·92	+ 0·05	....	+29·72	16 12 15·69
	α Scorpii	40·7	55·5	10·2	25·1	39·8	19 10·26	+ 0·05	29·75	+29·72	16 19 40·03
	Venus 2 Limb	......	19·3	34·0	48·4	......	6 33·90	− 0·06	....	+29·38	7 7 3·22
July 11	Sun 1 Limb	55·0	9·4	23·9	38·2	52·7	21 23·84	− 0·06	....	+29·37	7 21 53·15
	Sun 2 Limb	11·3	25·8	40·1	54·6	9·0	23 40·16	− 0·06	....	+29·37	7 24 9·47
July 13	Sun 1 Limb	4·2	18·7	33·0	47·5	1·8	29 33·04	− 0·06	....	+28·27	7 30 1·25
	Sun 2 Limb	20·4	34·7	49·1	3·6	17·7	31 49·10	− 0·06	....	+28·27	7 32 17·31
	λ Sagittarii	12·2	26·9	41·4	56·1	11·0	17 41·52	+ 0·05	....	+28·02	18 18 9·59
	δ Ursæ Minoris	12·5	56·5	40·0	23·0	......	23 39·50	− 4·24	27·53	+28·02	18 24 3·28
	α Lyræ	32·4	49·4	6·5	23·4	40·5	31 6·44	− 0·14	28·03	+28·01	18 31 34·31

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
July 13	Pallas	20·0	34·5	48·7	3·0	17·2	34 48·68	− 0·06	....	+28·01	18 35 16·63
	β Lyræ	13·9	29·6	45·6	1·6	17·4	43 45·62	− 0·11	+27·99	+28·01	18 44 13·52
July 15	Sun 1 Limb	11·6	26·0	40·2	54·5	9·0	37 40·26	− 0·06	....	+27·35	7 38 7·55
	Sun 2 Limb	27·4	41·7	56·0	10·4	24·6	39 56·02	− 0·06	....	+27·35	7 40 23·31
	α Herculis	30·4	43·4	57·6	11·3	24·8	6 57·50	− 0·04	26·89	+27·18	17 7 24·64
	δ Ursæ Minoris	14·0	56·5	40·0	24·0	......	23 40·10	− 4·24	26·56	+27·16	18 24 3·02
	Pallas	48·8	3·1	17·3	31·7	46·0	33 17·38	− 0·06	....	+27·16	18 33 44·48
	β Lyræ	14·5	30·6	46·4	2·3	18·2	43 46·40	− 0·11	27·21	+27·15	18 44 13·44
	ζ Aquilæ	12·1	26·0	39·5	53·2	7·0	57 39·56	− 0·04	27·18	+27·15	18 58 6·67
	α Aquilæ	7·8	21·3	34·7	48·1	1·6	42 34·70	− 0·02	27·29	+27·13	19 43 1·81
	β Aquilæ	36·7	50·1	3·5	16·8	30·2	47 3·46	− 0·01	27·20	+27·13	19 47 30·58
	π Capricorni	......	......	46·0	0·1	14·0	17 46·01	+ 0·04	....	+27·12	20 18 13·17
July 16	Sun 1 Limb	14·3	28·8	43·1	57·3	11·7	41 43·04	− 0·06	....	+26·87	7 42 9·85
	Sun 2 Limb	30·2	44·4	58·7	13·1	27·4	43 58·76	− 0·06	....	+26·87	7 44 25·57
	α Ursæ Minoris S.P.	......	......	......	47·5	0·0	1 34·35	+ 9·77	26·54	+26·76	13 2 10·88
	η Bootis	11·5	25·6	39·6	53·7	7·8	46 39·64	− 0·05	26·71	+26·74	13 47 6·33
	δ Ophiuchi	7·7	21·1	34·3	47·7	1·0	5 34·36	+ 0·01	26·71	+26·69	16 6 1·06
	Saturn 1 Limb Ring	51·5	......	20·0	......	48·6	59 20·03	+ 0·04	....	+26·67	16 59 46·74
	Saturn 2 Limb Ring	......	8·8	......	37·6	......	59 23·20	+ 0·04	....	+26·67	16 59 49·91
	α Herculis	30·2	44·0	57·6	11·4	25·1	6 57·66	− 0·04	26·73	+26·67	17 7 24·29
	Piazzi XVII. 177.	13·2	26·8	40·4	54·0	7·4	30 40·36	0·00	....	+26·66	17 31 7·02
	δ Ursæ Minoris	13·0	57·0	40·0	23·5	......	23 39·85	− 4·24	26·62	+26·64	18 24 2·25
	β Lyræ	15·2	31·1	47·1	2·9	18·6	43 46·98	− 0·11	26·63	+26·63	18 44 13·50
	δ Aquilæ	36·2	49·4	2·7	16·1	29·3	17 2·74	− 0·01	26·59	+26·61	19 17 29·34
	29 Capricorni	2·9	16·6	30·3	44·1	57·7	6 30·32	+ 0·03	....	+26·57	21 6 56·92
	ε Capricorni	15·6	29·8	44·0	58·2	12·3	27 43·98	+ 0·04	....	+26·56	21 28 10·58
	Moon 2 Limb	......	......	6·3	20·9	......	36 6·53	+ 0·03	....	+26·56	21 36 33·12
July 17	12 Canum Venat.	33·9	51·0	8·1	25·3	42·4	48 8·14	− 0·15	26·14	+26·19	12 48 34·18
	α Ursæ Minoris S.P.	......	......	34·5	47·5	1·0	1 34·63	+ 9·77	27·06	+26·19	13 2 10·59
	α Virginis	55·1	8·7	22·2	35·7	49·2	16 22·18	+ 0·02	26·23	+26·18	13 16 48·38
	ε Bootis	6·5	21·5	36·5	51·6	6·6	37 36·54	− 0·09	26·03	+26·15	14 38 2·60
	Saturn 1 Limb Ring	......	53·9	......	22·6	......	59 8·25	+ 0·04	....	+26·08	16 59 34·37
	Saturn 2 Limb Ring	42·8	......	11·3	......	39·8	59 11·30	+ 0·04	....	+26·08	16 59 37·42
	α Herculis	30·7	44·6	58·3	12·0	25·8	6 58·28	− 0·04	26·11	+26·08	17 7 24·32
	β Lyræ	15·5	31·5	47·6	3·6	19·3	43 47·50	− 0·11	26·12	+26·04	18 44 13·43
July 18	Sun 1 Limb	18·5	32·8	47·1	1·6	16·1	49 47·22	− 0·05	....	+25·67	7 50 12·84
	Sun 2 Limb	34·1	48·5	2·8	17·0	......	52 2·73	− 0·05	....	+25·67	7 52 28·35
July 20	Sun 1 Limb	......	35·8	49·9	4·2	18·2	57 49·92	− 0·05	....	+24·34	7 58 14·21
	Sun 2 Limb	36·5	50·7	5·0	19·2	33·3	0 4·94	− 0·05	....	+24·34	8 0 29·23
	δ Ophiuchi	......	23·2	37·1	50·5	......	5 36·93	+ 0·01	24·12	+24·12	16 6 1·06
July 22	Sun 1 Limb	22·0	36·2	50·3	4·6	......	5 50·38	− 0·05	....	+23·05	8 6 13·38
July 23	Sun 1 Limb	......	......	......	......	17·8	9 49·46	− 0·05	....	+22·41	8 10 11·82
	Sun 2 Limb	35·7	50·1	4·2	18·5	32·5	12 4·20	− 0·05	....	+22·41	8 12 26·56
July 24	Sun 1 Limb	......	34·1	48·2	2·4	......	13 48·24	− 0·05	....	+21·77	8 14 9·96
	α Herculis	35·5	49·0	2·8	16·6	30·3	7 2·84	− 0·04	21·50	+21·53	17 7 24·33
	δ Ursæ Minoris	15·0	58·0	39·0	......	......	23 40·43	− 4·24	24·33	+21·49	18 23 57·68
	Pallas	32·0	......	1·4	15·0	29·4	27 0·91	− 0·05	....	+21·49	18 27 22·35
	α Lyræ	38·9	56·0	12·8	30·1	47·1	31 12·98	− 0·14	21·46	+21·49	18 31 34·33
	β Lyræ	20·4	36·4	52·2	8·0	24·0	43 52·20	− 0·11	21·40	+21·49	18 44 13·58
	ζ Aquilæ	18·0	31·7	45·2	59·1	12·7	57 45·34	− 0·04	21·43	+21·48	18 58 6·78

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
July 24	⁎ D. – 3° 23′	19·4	32·2	45·6	59·1	12·3	6 45·72	– 0·01	....	+21·48	19 7 7·19
	δ Aquilæ	40·9	54·4	7·8	21·1	34·4	17 7·72	– 0·01	+ 21·66	+21·47	19 17 29·18
July 25	Sun 1 Limb	18·4	32·6	46·7	0·8	15·0	17 46·70	– 0·05	....	+21·14	8 18 7·79
	Sun 2 Limb	32·6	46·8	0·8	15·0	29·2	20 0·88	– 0·05	....	+21·14	8 20 21·97
	α Herculis	......	......	3·5	17·3	30·8	7 3·48	– 0·04	20·85	+20·92	17 7 24·36
	α Ophiuchi	45·5	59·1	12·8	26·5	40·0	27 12·78	– 0·04	20·99	+20·92	17 27 33·66
July 26	α Ursæ Minoris S.P.	22·0	34·0	48·0	......	......	1 47·70	+ 9·77	21·05	+20·74	13 2 18·21†
July 27	Sun 2 Limb	26·5	40·5	54·6	8·7	23·2	27 54·70	– 0·05	....	+20·15	8 28 14·80†
	δ Leonis	48·4	2·8	17·0	31·3	45·5	5 17·00	– 0·06	20·11	+20·07	11 5 37·01†
	β Leonis	7·6	21·5	35·2	49·1	3·0	40 35·28	– 0·04	20·03	+20·06	11 40 55·30†
	12 Canum Venat.	39·7	57·0	14·1	31·3	48·4	48 14·10	– 0·15	20·02	+20·02	12 48 33·97†
	α Ursæ Minoris S.P.	22·0	33·0	......	1·0	......	1 47·47	+ 9·77	22·04	+20·01	13 2 17·25†
July 28	Sun 2 Limb	23·0	......	51·2	5·4	19·5	31 51·26	– 0·05	....	+19·43	8 32 10·64†
	α Ursæ Minoris S.P.	......	36·5	......	3·0	......	1 49·90	+ 9·77	20·37	+19·29	13 2 18·96†
	α Virginis	......	15·5	29·1	42·4	56·0	16 29·00	+ 0·02	19·29	+19·28	13 16 48·30†
	α Cygni	5·5	24·3	43·0	1·7	20·3	35 42·96	– 0·18	19·01	+19·05	20 36 1·83†
	61 Cygni preceding	54·5	......	28·2	......	2·0	59 28·23	– 0·14	....	+19·04	20 59 47·13†
	61 Cygni following	......	13·0	......	46·5	......	59 29·75	– 0·14	....	+19·04	20 59 48·65†
	ζ Cygni	21·5	36·6	52·0	7·4	22·5	5 52·00	– 0·10	19·09	+19·04	21 6 10·94†
July 29	Sun 1 Limb	5·4	19·4	33·5	47·5	1·5	33 33·46	– 0·05	....	+18·64	8 33 52·05†
	Sun 2 Limb	19·0	33·0	47·0	1·2	......	35 47·08	– 0·05	....	+18·64	8 36 5·67†
	Saturn 1 Limb Ring	43·2	......	11·6	......	......	57 11·66	+ 0·04	....	+18·36	16 57 30·06†
	Saturn 2 Limb Ring	......	0·2	......	28·5	......	57 14·35	+ 0·04	....	+18·36	16 57 32·75†
	α Herculis	38·5	52·3	6·0	19·7	33·4	7 5·98	– 0·04	18·32	+18·35	17 7 24·29†
	α Ophiuchi	48·2	1·7	15·4	29·1	42·5	27 15·38	– 0·04	18·37	+18·34	17 27 33·68†
	δ Ursæ Minoris	18·0	2·0	46·0	29·0	......	23 45·30	– 4·24	18·22	+18·31	18 23 59·37†
	α Lyræ	42·0	59·2	16·2	33·2	50·3	31 16·18	– 0·14	18·23	+18·30	18 31 34·34†
	β Lyræ	23·5	39·2	55·4	11·2	27·0	43 55·26	– 0·11	18·33	+18·30	18 44 13·45†
	γ Aquilæ	57·3	11·0	24·4	37·8	51·2	38 24·34	– 0·03	18·32	+18·27	19 38 42·58†
July 30	Sun 1 Limb	......	......	......	43·0	56·8	37 28·84	– 0·05	....	+17·92	8 37 46·71†
	Sun 2 Limb	14·3	28·2	......	......	......	39 42·32	– 0·05	....	+17·92	8 40 0·19†
	12 Canum Venat.	......	59·2	16·3	33·3	50·5	48 16·26	– 0·15	17·82	+17·81	12 48 33·92†
	(*a*) α Ursæ Minoris S.P.	......	......	......	10·0	23·0	1 56·95	+ 7·52	17·09	+17·81	13 2 22·28†
	α Virginis	3·4	17·0	......	......	57·4	16 30·44	+ 0·10	17·75	+17·80	13 16 48·34†
	δ Ursæ Minoris	......	......	......	28·0	10·5	23 44·60	– 3·26	17·67	+17·66	18 23 59·00†
	β Lyræ	24·2	40·1	55·7	11·7	27·5	43 55·84	– 0·05	17·68	+17·66	18 44 13·45†
	ζ Aquilæ	21·7	35·4	49·0	2·7	16·4	57 49·04	+ 0·03	17·67	+17·64	18 58 6·71†
	⁎ D. – 3° 23′	23·0	36·2	49·5	3·0	16·2	6 49·58	+ 0·06	....	+17·64	19 7 7·28†
	δ Aquilæ	45·2	58·4	11·7	25·0	38·3	17 11·72	+ 0·06	17·62	+17·63	19 17 29·41†
July 31	Sun 1 Limb	......	......	23·3	37·4	51·5	41 23·39	+ 0·02	....	+17·22	8 41 40·63†
	Sun 2 Limb	8·5	22·5	36·6	50·7	4·6	43 36·58	+ 0·02	....	+17·22	8 43 53·82†
	α Cygni	7·7	26·4	45·2	4·0	22·5	35 45·16	– 0·11	16·76	+16·86	20 36 1·91†
	α Canis Minoris	......	......	39·6	53·3	6·5	30 39·79	+ 0·05	16·65	+16·54	7 30 56·38†
Aug. 1	Sun 1 Limb	49·5	3·4	17·5	31·5	45·6	45 17·50	+ 0·02	....	+16·50	8 45 34·02†
	Sun 2 Limb	2·5	16·6	30·6	44·6	58·6	47 30·58	+ 0·02	....	+16·50	8 47 47·10†
	α Ursæ Minoris S.P.	......	......	......	......	27·0	2 0·80	+ 7·52	14·73	+16·37	13 2 24·69†
	α Virginis	4·6	18·2	31·6	45·2	58·6	16 31·64	+ 0·10	16·53	+16·36	13 16 48·10†
	α Herculis	40·5	54·3	8·1	21·7	35·4	7 8·00	+ 0·03	16·20	+16·25	17 7 24·28†
	α Ophiuchi	50·2	3·6	17·4	31·1	44·6	27 17·38	+ 0·03	16·27	+16·24	17 27 33·65†
	δ Ursæ Minoris	......	......	......	28·5	......	23 45·20	– 3·26	16·53	+16·21	18 23 58·15†

(*a*) Before this observation the Telescope received a blow.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Aug. 1	β Lyræ	25·5	41·3	57·2	13·3	......	43 57·26	− 0·05	+16·25	+16·20	18 44 13·41†
	α Cygni	......	27·3	46·0	4·6	23·3	35 45·96	− 0·11	15·96	+16·15	20 36 2·00†
Aug. 2	(*a*) Moon 1 Limb	32·0	46·0	59·8	13·5	27·3	33 59·72	+ 0·10	....	+15·69	12 34 15·51†
	12 Canum Venat.	......	......	......	35·4	52·5	48 18·24	− 0·08	15·72	+15·68	12 48 33·84†
	α Ursæ Minoris S.P.	35·5	......	0·0	......	......	2 0·75	+ 7·52	15·52	+15·68	13 2 23·95†
	ζ Aquilæ	24·0	37·5	51·2	5·0	18·5	57 51·24	+ 0·03	15·46	+15·50	18 58 6·77†
	α Aquilæ	19·6	33·2	46·5	0·0	13·4	42 46·54	+ 0·04	15·50	+15·47	19 43 2·05†
	β Aquilæ	48·5	2·0	15·3	28·5	42·0	47 15·26	+ 0·05	15·46	+15·47	19 47 30·78†
Aug. 3	Sun 1 Limb	35·5	49·7	......	17·4	31·5	53 3·52	+ 0·02	....	+14·98	8 53 18·52†
	Sun 2 Limb	48·5	2·4	16·4	30·5	44·5	55 16·46	+ 0·02	....	+14·98	8 55 31·46†
	α Herculis	......	......	9·5	......	37·1	7 9·58	+ 0·03	14·60	+14·67	17 7 24·28†
	α Ophiuchi	51·7	15·4	19·2	32·5	46·2	27 19·00	+ 0·03	14·64	+14·66	17 27 33·69†
	α Lyræ	......	......	19·6	36·6	53·6	31 19·60	− 0·07	14·69	+14·62	18 31 34·15†
	β Lyræ	27·2	43·1	58·7	14·8	30·5	43 58·86	− 0·05	14·63	+14·61	18 44 13·42†
Aug. 4	Sun 2 Limb	41·1	55·2	9·2	23·2	37·0	59 9·14	+ 0·02	....	+13·71	8 59 22·87
	α Ursæ Minoris S.P.	38·5	52·0	......	18·5	......	2 5·23	+ 7·52	12·49	+13·57	13 2 26·32
	α Bootis	42·4	56·4	10·5	24·7	38·7	8 10·54	+ 0·01	13·53	+13·53	14 8 24·08
	ε Bootis	18·6	33·6	48·7	3·8	18·8	37 48·70	− 0·03	13·54	+13·52	14 38 2·19
	(*b*) Saturn 1 Limb Ring	......	......	......	48·2	......	56 33·94	+ 0·14	....	+13·43	16 56 47·51
	Saturn 2 Limb Ring	8·2	......	36·4	......	......	56 36·56	+ 0·14	....	+13·43	16 56 50·13
	α Herculis	43·4	57·1	10·8	24·5	38·3	7 10·82	+ 0·03	13·35	+13·43	17 7 24·28
	δ Ursæ Minoris	......	4·5	......	......	......	23 47·70	− 3·26	13·18	+13·38	18 23 57·82
	α Aquilæ	21·8	35·2	48·6	2·2	15·5	42 48·66	+ 0·04	13·38	+13·34	19 43 2·04
	β Aquilæ	50·6	4·1	17·4	30·7	44·0	47 17·36	+ 0·05	13·37	+13·34	19 47 30·75
Aug. 5	Sun 2 Limb	......	46·3	0·3	......	28·2	3 0·30	+ 0·02	....	+13·27	9 3 13·59†
	α Herculis	43·6	57·4	11·1	25·0	38·6	7 11·14	+ 0·03	13·02	+12·99	17 7 24·16†
	α Ophiuchi	53·4	7·0	20·5	34·3	48·0	27 20·64	+ 0·03	12·98	+12·98	17 27 33·65†
	δ Ursæ Minoris	......	......	47·0	31·5	14·0	23 47·70	− 3·26	12·89	+12·95	18 23 57·39†
	β Lyræ	......	44·6	0·4	16·4	32·3	44 0·50	− 0·05	12·97	+12·94	18 44 13·39†
	ζ Aquilæ	26·5	40·0	53·6	7·5	21·1	57 53·74	+ 0·03	12·95	+12·93	18 58 6·70†
	δ Aquilæ	50·0	3·2	16·4	29·8	43·1	17 16·50	+ 0·06	12·84	+12·92	19 17 29·48†
Aug. 6	Moon 1 Limb	39·0	54·0	9·2	24·5	39·6	52 9·26	+ 0·16	....	+12·25	15 52 21·67†
	β^1 Scorpii	......	45·1	59·2	13·3	27·4	55 59·22	+ 0·13	12·25	+12·25	15 56 11·60†
	δ Ophiuchi	22·1	35·3	48·5	2·0	15·2	5 48·62	+ 0·08	12·19	+12·25	16 6 0·95†
	α Scorpii	57·7	12·5	27·4	42·2	57·0	19 27·36	+ 0·15	12·33	+12·24	16 19 39·75†
	δ Ursæ Minoris	......	......	48·0	33·5	16·0	23 49·30	− 3·26	10·99	+12·17	18 23 58·21†
	β Lyræ	29·5	45·5	1·3	17·3	33·0	44 1·32	− 0·05	12·15	+12·16	18 44 13·43†
	ζ Aquilæ	27·3	40·6	54·5	8·3	22·0	57 54·54	+ 0·03	12·15	+12·15	18 58 6·72†
Aug. 8	α Ophiuchi	55·7	9·4	23·1	36·6	50·2	27 23·00	+ 0·03	10·59	+10·57	17 27 33·60†
	Moon 1 Limb	17·6	33·2	49·0	4·5	20·3	41 48·92	+ 0·18	....	+10·56	17 41 59·66†
	λ Sagittarii	......	44·0	59·0	13·7	28·4	17 58·91	+ 0·15	....	+10·54	18 18 9·60†
	δ Ursæ Minoris	......	......	50·5	34·0	16·5	23 50·47	− 3·26	9·21	+10·53	18 23 57·74†
	β Lyræ	31·1	47·1	3·0	19·0	34·6	44 2·96	− 0·05	10·49	+10·52	18 44 13·43†
	ζ Aquilæ	29·0	42·5	56·2	10·0	23·5	57 56·24	+ 0·03	10·44	+10·52	18 58 6·79†
	⁎ D. − 3° 23′	30·0	43·4	56·6	10·1	23·3	6 56·68	+ 0·06	....	+10·51	19 7 7·25†
	δ Aquilæ	52·1	5·4	18·8	32·2	45·5	17 18·80	+ 0·06	10·54	+10·50	19 17 29·36†
	γ Aquilæ	5·1	18·6	32·1	45·5	59·1	38 32·08	+ 0·04	10·52	+10·49	19 38 42·61†
Aug. 9	α Ursæ Minoris S.P.	......	58·0	12·0	24·0	......	2 11·33	+ 7·52	9·92	+ 9·56	13 2 28·41†
	α Ophiuchi	56·9	10·6	24·2	38·0	51·5	27 24·24	+ 0·03	9·34	+ 9·35	17 27 33·62
	δ Ursæ Minoris	......	6·0	50·5	33·0	......	23 49·87	− 3·26	9·50	+ 9·30	18 23 55·91
	α Lyræ	50·9	7·8	24·9	41·9	59·0	31 24·90	− 0·07	9·32	+ 9·30	18 31 34·13

(*a*) Faint. (*b*) Extremely faint.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Aug. 9	Moon 1 Limb	4·3	19·7	35·1	50·8	6·3	37 35·24	+ 0·16	....	+ 9·29	18 37 44·69
	β Lyræ	32·4	48·3	4·2	20·0	36·0	44 4·18	− 0·05	+ 9·26	+ 9·29	18 44 13·42
	ζ Aquilæ	30·0	43·6	57·4	11·1	24·8	57 57·38	+ 0·03	9·29	+ 9·28	18 58 6·69
Aug. 10		INSTRUMENT REVERSED.									
Aug. 11	Sun 2 Limb	29·8	43·3	57·5	11·2	25·0	25 57·36	+ 0·08	....	+ 7·42	9 26 4·86
	β Leonis	20·2	34·0	47·8	1·6	15·3	40 47·78	+ 0·08	7·34	+ 7·32	11 40 55·18
	12 Canum Venat.	52·2	9·2	26·4	43·6	0·8	48 26·44	− 0·04	7·36	+ 7·26	12 48 33·66
	α Ursæ Minoris S.P.	50·5	3·5	16·0	......	44·0	2 16·90	+ 7·56	5·67	+ 7·25	13 2 31·71
	γ Aquilæ	8·8	22·2	35·7	49·2	2·7	38 35·72	+ 0·09	6·82	+ 6·88	19 38 42·69
	β Aquilæ	57·1	10·4	23·7	37·2	50·5	47 23·78	+ 0·11	6·89	+ 6·87	19 47 30·76
	α^2 Capricorni	40·0	53·6	7·3	21·0	34·6	9 7·30	+ 0·18	6·90	+ 6·85	20 9 14·33
	β^2 Capricorni	30·6	44·3	57·9	11·8	25·5	11 58·02	+ 0·18	....	+ 6·85	20 12 5·05
	Moon 1 Limb	12·7	27·4	42·1	56·6	11·2	25 42·00	+ 0·21	....	+ 6·83	20 25 49·04
	α Cygni	17·6	36·3	55·0	13·6	32·3	35 54·96	− 0·07	6·93	+ 6·82	20 36 1·71
	μ Aquarii	31·1	44·7	58·2	11·6	25·2	43 58·16	+ 0·17	....	+ 6·81	20 44 5·14
	χ^1 Capricorni	......	......	......	34·8	49·5	59 20·62	+ 0·21	....	+ 6·79	20 59 27·62
Aug. 12	β Lyræ	36·5	52·3	8·1	24·2	40·0	44 8·22	0·00	5·14	+ 5·25	18 44 13·47
	δ Aquilæ	57·7	11·0	24·1	37·4	50·7	17 24·18	+ 0·12	5·08	+ 5·21	19 17 29·51
	γ Aquilæ	10·5	23·8	37·3	50·6	4·3	38 37·30	+ 0·09	5·24	+ 5·19	19 38 42·58
	α Aquilæ	29·8	43·2	56·7	10·1	23·7	42 56·70	+ 0·10	5·28	+ 5·18	19 43 1·98
	β Aquilæ	58·6	12·0	25·5	38·7	52·2	47 25·40	+ 0·11	5·27	+ 5·18	19 47 30·69
	μ Aquarii	......	46·4	59·7	13·2	26·7	43 59·76	+ 0·17	....	+ 5·13	20 44 5·06
	Moon 1 Limb	26·4	40·6	55·0	9·3	23·7	16 55·00	+ 0·19	....	+ 5·10	21 17 0·29
	δ Capricorni	43·4	57·0	11·2	25·0	38·8	38 11·08	+ 0·19	....	+ 5·07	21 38 16·34
	ι Aquarii	18·9	32·5	46·2	0·0	13·7	57 46·26	+ 0·18	....	+ 5·06	21 57 51·50
Aug. 13	Venus 1 Limb	47·7	1·5	......	29·0	42·8	55 15·25	+ 0·08	....	+ 4·37	9 55 19·70
	α Ursæ Minoris S.P.	......	6·5	......	35·0	......	2 20·65	+ 7·56	3·26	+ 4·19	13 2 32·40
	α Ophiuchi	2·1	15·7	29·5	42·9	56·6	27 29·36	+ 0·08	4·12	+ 3·94	17 27 33·38
	α Lyræ	56·4	13·4	30·5	47·3	4·1	31 30·34	− 0·03	3·78	+ 3·88	18 31 34·19
	γ Aquilæ	......	......	38·8	52·3	5·6	38 38·73	+ 0·09	3·80	+ 3·82	19 38 42·64
	α Aquilæ	31·4	44·8	58·2	11·6	25·1	42 58·22	+ 0·10	3·76	+ 3·82	19 43 2·14
	β Aquilæ	0·1	13·5	26·8	40·3	53·7	47 26·88	+ 0·11	3·79	+ 3·81	19 47 30·80
	ι Aquarii	......	......	47·2	1·2	15·0	57 47·40	+ 0·18	....	+ 3·70	21 57 51·28
Aug. 14	Sun 1 Limb	41·8	55·3	8·9	22·7	36·5	35 9·04	+ 0·08	....	+ 3·11	9 35 12·23
	Sun 2 Limb	52·1	6·2	19·8	33·5	47·3	37 19·78	+ 0·08	....	+ 3·11	9 37 22·97
	α Ursæ Minoris S.P.	......	......	21·0	37·0	......	2 22·30	+ 7·56	2·27	+ 2·93	13 2 32·79
	ε Bootis	29·1	44·1	59·1	14·1	29·2	37 59·12	+ 0·02	2·91	+ 2·85	14 38 1·99
	α Coronæ Borealis	24·5	39·3	54·3	9·2	24·1	27 54·28	+ 0·03	2·88	+ 2·81	15 27 57·12
	δ Ursæ Minoris	......	12·0	56·0	39·0	23·5	23 55·95	− 3·23	1·77	+ 2·67	18 23 55·39
	β Lyræ	38·9	54·6	10·8	26·6	42·5	44 10·68	0·00	2·65	+ 2·65	18 44 13·33
	ζ Aquilæ	36·6	50·3	3·9	17·8	31·3	58 3·98	+ 0·08	2·61	+ 2·64	18 58 6·70
	* D. − 3° 23′	37·9	51·1	4·5	17·9	31·2	7 4·52	+ 0·14	....	+ 2·64	19 7 7·30
	δ Aquilæ	0·1	13·4	26·7	40·1	53·4	17 26·74	+ 0·12	2·52	+ 2·63	19 17 29·49
Aug. 15	Sun 1 Limb	......	......	......	......	22·8	38 55·36	+ 0·08	....	+ 2·00	9 38 57·44
	Sun 2 Limb	38·6	52·3	6·1	19·7	33·6	41 6·06	+ 0·08	....	+ 2·00	9 41 8·14
	α Bootis	53·7	7·7	22·0	36·2	50·3	8 21·98	+ 0·06	1·89	+ 1·80	14 8 23·84
	α Herculis	54·8	8·5	22·3	35·9	49·7	7 22·24	+ 0·08	1·75	+ 1·67	17 7 23·99
	α Ophiuchi	4·7	18·1	31·7	45·3	59·0	27 31·76	+ 0·08	1·70	+ 1·65	17 27 33·49
	δ Ursæ Minoris	29·5	......	......	......	......	23 56·20	− 3·23	1·19	+ 1·60	18 23 54·57
	β Lyræ	40·2	56·1	11·9	27·7	43·8	44 11·94	0·00	1·38	+ 1·58	18 44 13·52

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Aug. 17	β Lyræ	42·4	58·4	14·3	30·2	46·0	44 14·26	0·00	− 0·96	− 0·96	18 44 13·30
Aug. 18	Venus 1 Limb	43·7	57·2	10·8	24·4	38·2	19 10·86	+ 0·09	………	− 1·51	10 19 9·44
	α Ursæ Minoris S.P.	2·0	15·0	27·5	43·0	55·5	2 28·60	+ 7·56	1·47	− 1·61	13 2 34·55
	η Bootis	39·2	53·2	7·3	21·4	35·6	47 7·34	+ 0·06	1·51	− 1·63	13 47 5·77
	α Bootis	57·0	11·1	25·3	39·5	53·6	8 25·30	+ 0·06	1·47	− 1·65	14 8 23·71
	α Lyræ	1·8	18·8	35·8	53·0	9·9	31 35·86	− 0·03	1·81	− 1·80	18 31 34·03
	α Cygni	……	45·4	4·0	……	……	36 4·04	− 0·07	2·17	− 1·88	20 36 2·09
Aug. 19	(a) α Bootis	57·7	11·7	26·0	40·2	54·5	8 26·02	+ 0·06	2·20	− 2·20	14 8 23·88
	δ Ursæ Minoris	32·5	15·0	59·5	42·0	26·0	23 59·00	− 3·23	2·97	− 2·31	18 23 53·46
Aug. 20	α^2 Capricorni	50·0	3·5	17·1	30·8	44·4	9 17·16	+ 0·18	2·96	− 2·96	20 9 14·38
	α Cygni	27·5	46·0	4·8	23·6	42·2	36 4·82	− 0·07	2·96	− 2·97	20 36 1·78
	Moon 2 Limb	……	39·8	……	……	……	23 55·14	+ 0·03	………	− 3·18	4 23 51·99
Aug. 21	Sun 1 Limb	53·5	6·9	20·6	34·1	47·5	1 20·52	+ 0·09	………	− 3·34	10 1 17·27
	Sun 2 Limb	3·0	16·7	30·2	43·7	57·6	3 30·24	+ 0·09	………	− 3·34	10 3 26·99
	Venus 1 Limb	52·2	5·7	19·4	32·9	46·8	33 19·40	+ 0·09	………	− 3·36	10 33 16·13
	α Ursæ Minoris S.P.	……	……	31·5	……	……	2 31·80	+ 7·56	2·83	− 3·42	13 2 35·94
	γ Aquilæ	……	32·6	46·2	59·6	13·1	38 46·12	+ 0·09	3·62	− 3·61	19 38 42·60
	α Aquilæ	38·7	52·1	5·6	19·0	32·4	43 5·56	+ 0·10	3·61	− 3·61	19 43 2·05
	β Aquilæ	7·6	20·8	34·3	47·6	0·9	47 34·24	+ 0·11	3·60	− 3·61	19 47 30·74
	ζ Cygni	44·2	59·4	14·7	30·1	45·5	6 14·78	+ 0·01	3·67	− 3·63	21 6 11·16
	α Aurigæ	21·4	40·4	59·5	18·5	37·4	4 59·44	− 0·08	3·60	− 3·70	5 4 55·66
Aug. 22	Sun 1 Limb	35·5	49·3	2·8	16·4	30·0	5 2·80	+ 0·09	………	− 3·74	10 4 59·15
	Sun 2 Limb	45·2	59·0	12·4	25·9	39·7	7 12·44	+ 0·09	………	− 3·74	10 7 8·79
	β Leonis	31·2	45·0	58·7	12·6	26·4	40 58·78	+ 0·08	3·68	− 3·76	11 40 55·10
	α Ursæ Minoris S.P.	8·0	21·0	33·0	48·0	0·5	2 34·10	+ 7·56	4·53	− 3·77	13 2 37·89
	η Bootis	41·4	55·5	9·6	23·7	37·7	47 9·58	+ 0·06	3·80	− 3·78	13 47 5·86
	α Bootis	59·4	13·3	27·5	41·7	55·7	8 27·52	+ 0·06	3·74	− 3·78	14 8 23·80
	δ Ursæ Minoris	31·0	16·0	59·0	43·0	27·5	23 59·30	− 3·23	4·35	− 3·87	18 23 52·20
	β Lyræ	45·5	1·3	17·3	33·1	49·0	44 17·24	0·00	4·01	− 3·87	18 44 13·37
	ζ Cygni	44·5	59·5	15·0	30·2	45·5	6 14·94	+ 0·01	3·83	− 3·92	21 6 11·03
	δ Ursæ Minoris S.P.	……	……	……	36·5	20·0	23 52·95	+ 3·49	4·90	− 4·11	6 23 52·33
	Moon 2 Limb	5·2	20·5	35·8	51·2	6·7	38 35·88	+ 0·03	………	− 4·11	6 38 31·80
Aug. 24	Sun 1 Limb	58·9	12·2	25·8	39·5	53·1	12 25·90	+ 0·09	………	− 4·66	10 12 21·33
	Sun 2 Limb	8·2	21·8	35·5	48·8	2·5	14 35·36	+ 0·09	………	− 4·66	10 14 30·79
	α Ursæ Minoris S.P.	11·0	25·0	36·5	51·0	5·0	2 37·70	+ 7·56	6·97	− 4·72	13 2 40·54
	η Bootis	42·4	56·4	10·5	24·4	38·6	47 10·46	+ 0·06	4·70	− 4·73	13 47 5·79
	α Bootis	0·3	14·3	28·4	42·5	56·7	8 28·44	+ 0·06	4·69	− 4·74	14 8 23·76
	α Herculis	1·3	14·7	28·7	42·4	56·1	7 28·64	+ 0·08	4·78	− 4·80	17 7 23·92
	δ Ursæ Minoris	31·0	14·5	59·0	43·0	26·5	23 58·80	− 3·23	4·59	− 4·83	18 23 50·74
	ζ Aquilæ	44·0	57·7	11·5	25·1	38·8	58 11·42	+ 0·08	4·91	− 4·85	18 58 6·65
	α Aquilæ	39·9	53·4	6·8	20·3	33·7	43 6·82	+ 0·10	4·89	− 4·87	19 43 2·05
Aug. 25	α Ophiuchi	11·4	25·2	38·7	52·4	6·0	27 38·74	+ 0·08	5·42	− 5·47	17 27 33·35
	δ Ursæ Minoris	31·5	14·5	57·5	42·0	27·0	23 58·50	− 3·23	4·66	− 5·50	18 23 49·77
	β Lyræ	47·0	2·8	18·7	34·5	50·5	44 18·70	0·00	5·51	− 5·51	18 44 13·19
	ζ Aquilæ	44·7	58·3	12·1	25·7	39·4	58 12·04	+ 0·08	5·54	− 5·51	18 58 6·61
	δ Aquilæ	8·1	21·4	34·6	48·0	1·4	17 34·70	+ 0·12	5·52	− 5·52	19 17 29·30
	γ Aquilæ	21·0	34·5	48·0	1·6	15·0	38 48·02	+ 0·09	5·55	− 5·53	19 38 42·58
	Mercury 2 Limb	25·3	38·9	52·6	6·3	20·1	16 52·64	+ 0·08	………	− 5·91	9 16 46·81
Aug. 26	Sun 1 Limb	20·7	34·1	47·6	1·3	14·8	19 47·70	+ 0·09	………	− 5·93	10 19 41·86
	Sun 2 Limb	29·7	43·2	56·7	10·3	33·8	21 56·74	+ 0·09	………	− 5·93	10 21 50·90

(a) At $11^h\ 24^m$ removed four small pieces of brass wire from the jar of the pendulum.

Date.	Object Observed.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Aug. 26	α Ursæ Minoris S.P.	9·0	24·0	……	……	6·0	2 37·57	+ 7·56	– 5·70	– 6·01	13 2 39·12
	α Bootis	1·4	15·4	29·6	43·7	57·8	8 29·58	+ 0·06	5·85	– 6·04	14 8 23·60
	α Ophiuchi	12·2	25·6	39·4	53·1	6·6	27 39·38	+ 0·08	6·08	– 6·13	17 27 33·33
	α Lyræ	6·0	23·1	40·2	57·1	14·1	31 40·10	– 0·03	6·19	– 6·16	18 31 33·91
	(*a*) β Lyræ	47·7	3·6	19·6	35·4	51·3	44 19·52	0·00	6·35	– 6·16	18 44 13·36
Aug. 28	Sun 1 Limb	40·4	53·9	7·5	20·9	34·4	27 7·42	+ 0·09	………	– 6·64	10 27 0·87
	Sun 2 Limb	49·4	2·8	16·3	29·8	43·3	29 16·32	+ 0·09	………	– 6·64	10 29 9·77
	δ Ursæ Minoris	32·0	15·0	59·5	43·5	27·5	23 59·50	– 3·23	6·79	– 6·66	18 23 49·61
	β Lyræ	48·0	3·8	19·8	35·7	51·5	44 19·76	0·00	6·62	– 6·66	18 44 13·10
	δ Aquilæ	9·4	22·6	35·8	49·1	2·5	17 35·88	+ 0·12	6·72	– 6·66	19 17 29·34
	γ Aquilæ	22·1	35·6	49·2	2·6	16·1	38 49·12	+ 0·09	6·66	– 6·66	19 38 42·55
	α Aquilæ	41·6	55·1	8·5	22·0	35·4	43 8·52	+ 0·10	6·61	– 6·66	19 43 1·96
	β Aquilæ	10·6	23·9	37·4	50·6	4·0	47 37·30	+ 0·11	6·69	– 6·66	19 47 30·75
	61 Cygni preceding	20·2	……	53·8	……	27·7	59 53·90	– 0·03	………	– 6·66	20 59 47·21
	61 Cygni following	……	38·3	……	12·2	……	59 55·25	– 0·03	………	– 6·66	20 59 48·56
Aug. 29	Sun 1 Limb	19·4	33·0	46·4	0·0	13·6	30 46·48	+ 0·09	………	– 6·70	10 30 39·87
	Sun 2 Limb	28·4	41·8	55·4	8·8	22·4	32 55·36	+ 0·09	………	– 6·70	10 32 48·75
	α Ursæ Minoris S.P.	……	29·0	……	……	……	2 42·70	+ 7·56	9·21	– 6·71	13 2 43·55
	ε Bootis	38·5	53·6	8·6	23·6	38·7	38 8·60	+ 0·02	6·82	– 6·71	14 38 1·91
	α Herculis	3·0	16·7	30·6	44·4	58·2	7 30·58	+ 0·08	6·80	– 6·72	17 7 23·94
	δ Ursæ Minoris	31·5	15·0	59·0	42·0	26·5	23 58·80	– 3·23	6·47	– 6·72	18 23 48·85
	β Lyræ	48·0	4·0	19·8	35·7	51·5	44 19·80	0·00	6·68	– 6·72	18 44 13·08
	ζ Aquilæ	45·9	59·5	13·2	26·9	40·5	58 13·20	+ 0·08	6·74	– 6·73	18 58 6·55
	⁎ D. – 3° 23′	47·2	0·6	14·0	27·3	40·5	7 13·92	+ 0·14	………	– 6·73	19 7 7·33
	γ Aquilæ	22·0	35·5	49·0	2·6	16·1	38 49·04	+ 0·09	6·60	– 6·73	19 38 42·40
	α Aquilæ	41·7	55·2	8·5	22·0	35·5	43 8·58	+ 0·10	6·68	– 6·73	19 43 1·95
	61 Cygni preceding	……	37·1	……	10·8	……	59 53·95	– 0·03	………	– 6·74	20 59 47·18
	61 Cygni following	21·8	……	55·3	……	29·1	59 55·40	– 0·03	………	– 6·74	20 59 48·63
Aug. 30	Moon 1 Limb	0·7	14·5	28·5	42·4	56·3	0 28·48	+ 0·17	………	– 6·28	13 0 22·37†
	α Ursæ Minoris S.P.	……	28·0	41·0	57·0	……	2 42·00	+ 7·56	7·99	– 6·28	13 2 43·28†
	α Virginis	27·0	40·5	54·0	7·5	21·2	16 54·04	+ 0·17	6·20	– 6·28	13 16 47·93†
	α Bootis	1·6	15·7	30·0	44·1	58·3	8 29·94	+ 0·06	6·26	– 6·29	14 8 23·71†
	ε Bootis	38·2	53·1	8·1	23·0	38·1	38 8·10	+ 0·02	6·33	– 6·29	14 38 1·83†
	β Libræ	6·0	19·4	32·7	46·2	59·6	8 32·78	+ 0·17	6·37	– 6·29	15 8 26·66†
	Mercury 2 Limb	58·1	11·7	25·5	39·3	53·2	29 25·56	+ 0·08	………	– 7·03	9 29 18·61
Aug. 31	Sun 1 Limb	36·3	50·0	3·6	17·0	30·6	38 3·50	+ 0·10	………	– 7·04	10 37 56·56
	Sun 2 Limb	45·2	58·7	12·2	25·6	39·1	40 12·16	+ 0·10	………	– 7·04	10 40 5·22
	Venus 1 Limb	8·1	21·4	35·0	48·2	1·8	19 34·90	+ 0·11	………	– 7·05	11 19 27·96
	α Ursæ Minoris S.P.	14·0	27·5	40·5	55·0	9·0	2 41·20	+ 7·56	6·67	– 7·06	13 2 41·70
	α Virginis	27·8	41·3	54·8	8·2	22·0	16 54·82	+ 0·17	6·99	– 7·06	13 16 47·93
	η Bootis	44·7	58·7	12·7	26·8	40·8	47 12·74	+ 0·06	7·06	– 7·06	13 47 5·74
	α Bootis	2·4	16·6	30·6	44·7	58·9	8 30·64	+ 0·06	6·98	– 7·07	14 8 23·63
	δ Ursæ Minoris	33·0	16·0	59·5	43·0	28·0	23 59·90	– 3·23	8·35	– 7·10	18 23 49·57
	β Lyræ	48·5	4·4	20·3	36·2	52·2	44 20·32	0·00	7·24	– 7·10	18 44 13·22
	ζ Aquilæ	46·4	59·8	13·5	27·3	40·9	58 13·58	+ 0·08	7·15	– 7·11	18 58 6·55
	61 Cygni preceding	20·8	……	54·2	……	28·1	59 54·37	– 0·03	………	– 7·12	20 59 47·22
	61 Cygni following	……	38·8	……	12·7	……	59 55·75	– 0·03	………	– 7·12	20 59 48·60
	Uranus	43·6	56·8	10·1	23·6	37·1	20 10·24	+ 0·15	………	– 7·14	23 20 3·25
	Mercury 2 Limb	58·4	12·1	25·6	39·4	53·4	33 25·78	+ 0·08	………	– 7·22	9 33 18·64
Sept. 1	Sun 1 Limb	14·8	28·1	41·7	55·1	8·6	41 41·66	+ 0·10	………	– 7·23	10 41 34·53
	Sun 2 Limb	……	……	……	3·7	……	43 50·24	+ 0·10	………	– 7·23	10 43 43·11
	Venus 1 Limb	42·4	55·7	9·1	22·5	35·8	24 9·10	+ 0·11	………	– 7·23	11 24 1·98
	α^2 Capricorni	54·2	7·8	21·6	35·2	48·8	9 21·52	+ 0·18	7·37	– 7·30	20 9 14·40

(*a*) Aug 27. at 11^h 19^m removed a piece of brass wire from the jar of the pendulum.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		* Right Ascension observed. Apparent
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Sept. 1	α Cygni	31·5	50·3	9·1	27·8	46·5	36 9·04	− 0·07	− 7·29	− 7·31	20 36 1·66
	61 Cygni preceding	......	37·6	......	11·5	......	59 54·55	− 0·03	....	− 7·31	20 59 47·21
	61 Cygni following	22·2	......	55·8	......	29·6	59 55·87	− 0·03	....	− 7·31	20 59 48·53
	ζ Cygni	47·7	3·1	18·4	33·7	48·9	6 18·36	+ 0·01	7·28	− 7·31	21 6 11·06
	β Aquarii	52·2	5·6	19·1	32·4	45·8	23 19·02	+ 0·16	7·28	− 7·32	21 23 11·86
	ι Pegasi	3·7	17·1	30·6	44·0	57·5	36 30·58	+ 0·09	7·32	− 7·32	21 36 23·35
	Uranus	35·1	48·5	1·8	15·1	28·5	20 1·80	+ 0·15	....	− 7·35	23 19 54·60
Sept. 2	Sun 2 Limb	1·2	14·5	28·1	41·5	55·0	47 28·06	+ 0·10	....	− 7·53	10 47 20·63
	α Cygni	32·0	50·6	9·4	......	......	36 9·36	− 0·07	7·62	− 7·68	20 36 1·61
	β Aquarii	52·7	6·0	19·3	32·7	46·1	23 19·36	+ 0·16	7·62	− 7·70	21 23 11·82
	ι Pegasi	4·1	17·4	31·0	44·4	57·8	36 30·94	+ 0·09	7·68	− 7·70	21 36 23·33
	α Aquarii	18·8	32·1	45·4	58·8	12·1	57 45·44	+ 0·13	7·79	− 7·70	21 57 37·87
	α Pegasi	31·7	45·3	59·3	12·9	26·5	56 59·14	+ 0·08	7·80	− 7·70	22 56 51·52
	Uranus	26·6	40·0	53·4	6·7	19·9	19 53·32	+ 0·15	....	− 7·70	23 19 45·77
Sept. 3	Sun 1 Limb	30·2	43·6	57·1	10·5	24·0	48 57·08	+ 0·10	....	− 7·73	10 48 49·45
	Sun 2 Limb	38·4	52·1	5·5	18·8	32·4	51 5·44	+ 0·10	....	− 7·73	10 50 57·81
	Venus 1 Limb	......	......	......	29·1	42·2	33 15·60	+ 0·11	....	− 7·73	11 33 7·98
	α Ursæ Minoris S.P.	17·0	......	44·0	59·0	12·5	2 44·65	+ 7·56	8·62	− 7·73	13 2 44·48†
	δ Ophiuchi	41·5	54·7	8·1	21·4	34·7	6 8·08	+ 0·14	7·71	− 7·74	16 6 0·48
	α Scorpii	16·9	31·8	46·7	1·7	16·6	19 46·74	+ 0·23	7·55	− 7·74	16 19 39·23
	Moon 1 Limb	10·2	25·6	41·1	56·8	12·1	24 41·16	+ 0·25	....	− 7·74	16 24 33·67
	α Herculis	4·0	17·7	31·4	45·2	59·0	7 31·46	+ 0·08	7·76	− 7·74	17 7 23·80
	δ Ursæ Minoris	......	......	59·0	42·5	26·0	23 58·87	− 3·23	8·50	− 7·75	18 23 47·89
	ζ Aquilæ	47·1	0·6	14·1	27·8	41·6	58 14·24	+ 0·08	7·85	− 7·76	18 58 6·56
	γ Aquilæ	23·2	36·7	50·2	3·7	17·3	38 50·22	+ 0·09	7·83	− 7·78	19 38 42·53
	61 Cygni preceding	21·6	......	55·3	......	28·8	59 55·23	− 0·03	....	− 7·80	20 59 47·40
	61 Cygni following	......	39·7	......	13·5	......	59 56·60	− 0·03	....	− 7·80	20 59 48·77
	Uranus	18·4	31·7	45·0	58·4	11.7	19 45·04	+ 0·15	....	− 7·84	23 19 37·35
Sept. 4	α Ursæ Minoris S.P.	17·0	31·0	......	......	12·5	2 44·80	+ 7·56	8·29	− 8·07	13 2 44·29†
	α Herculis	4·5	18·0	31·6	45·5	59·4	7 31·80	+ 0·08	8·12	− 8·15	17 7 23·73
	Moon 1 Limb	15·6	......	......	......	......	19 46·78	+ 0·25	....	− 8·15	17 19 38·88
	α Ophiuchi	14·0	27·5	41·2	55·0	8·5	27 41·24	+ 0·08	8·08	− 8·15	17 27 33·17
	δ Ursæ Minoris	29·0	13·0	57.0	41·5	25·0	23 57·10	− 3·23	7·13	− 8·17	18 23 45·70
	β Lyræ	49·5	5·3	21·3	37·1	53·0	44 21·24	0·00	8·23	− 8·17	18 44 13·07
	γ Aquilæ	23·6	37·1	50·6	4·1	17·6	38 50·60	+ 0·09	8·22	− 8·19	19 38 42·50
	α Aquilæ	43·2	56·6	10·1	23·5	37·0	43 10·08	+ 0·10	8·22	− 8·20	19 43 1·98
	61 Cygni preceding	......	38·5	......	12·5	......	59 55·50	− 0·03	....	− 8·22	20 59 47·25
	61 Cygni following	23·3	......	56·8	......	30·7	59 56·93	− 0·03	....	− 8·22	20 59 48·68
	Uranus	9·9	23·3	36·7	49·9	3·4	19 36·64	+ 0·15	....	− 8·27	23 19 28·52
	Mercury 2 Limb	6·6	20·1	33·7	47·5	1·4	53 33·86	+ 0·08	....	− 8·48	9 53 25·46
Sept. 5	Sun 1 Limb	45·1	58·4	......	......	......	56 11·84	+ 0·10	....	− 8·52	10 56 3·42
	α Herculis	4·7	18·6	32·2	45·8	59·6	7 32·18	+ 0·08	8·52	− 8·66	17 7 23·60
	α Ophiuchi	14·4	28·1	41·7	55·3	9·0	27 41·70	+ 0·08	8·56	− 8·66	17 27 33·12
	Moon 1 Limb	52·2	7·8	23·4	38·9	54·4	15 23·34	+ 0·25	....	− 8·68	18 15 14·91
	δ Ursæ Minoris	......	14·0	59·0	43·0	26·5	23 58·85	− 3·23	9·28	− 8·68	18 23 46·94
	φ Sagittarii	21·8	36·8	51·9	6·8	21·8	35 51·82	+ 0·23	....	− 8·69	18 35 43·36
	β Lyræ	50·0	5·8	21·8	37·6	53·6	44 21·76	0·00	8·77	− 8·69	18 44 13·07
	α Cygni	33·3	51·9	10·7	29·4	47·9	36 10·64	− 0·07	8·94	− 8·71	20 36 1·86
	ι Pegasi	5·0	18·5	32·1	45·5	58·8	36 31·98	+ 0·09	8·72	− 8·72	21 36 23·35
	Uranus	1·5	14·8	28·2	41·5	54·8	19 28·16	+ 0·15	....	− 8·74	23 19 19·57
Sept. 7	Venus 1 Limb	58·2	11·5	24·8	38·1	51·5	51 24·82	+ 0·12	....	− 9·06	11 51 15·88
	α Bootis	4·4	18·4	32·5	46·5	0·6	8 32·48	+ 0·06	8·90	− 9·08	14 8 23·46
	ι Bootis	40·7	55·7	10·7	25·8	40·7	38 10·72	+ 0·02	9·07	− 9·08	14 38 1·66

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Sept. 7	δ Ursæ Minoris	30·5	14·0	58·0	42·0	26·5	23 58·20	− 3·23	− 9·43	− 9·11	18 23 45·86
	δ Aquilæ	11·5	24·9	38·4	51·6	4·8	17 38·24	+ 0·12	9·19	− 9·13	19 17 29·23
	52 Sagittarii	41·6	56·1	10·8	25·6	40·1	27 10·84	+ 0·22	………	− 9·13	19 27 1·93
	γ Aquilæ	24·4	38·0	51·6	5·0	18·5	38 51·50	+ 0·09	9·15	− 9·13	19 38 42·46
	57 Sagittarii	38·7	52·7	6·8	20·8	34·8	43 6·76	+ 0·20	………	− 9·14	19 42 57·82
	Moon 1 Limb	44·3	59·2	14·1	29·1	44·1	4 14·16	+ 0·23	………	− 9·14	20 4 5·25
	α^2 Capricorni	56·0	9·7	23·3	36·8	50·5	9 23·26	+ 0·18	9·15	− 9·14	20 9 14·30
	π Capricorni	54·4	8·4	22·5	36·6	50·6	18 22·50	+ 0·19	………	− 9·15	20 18 13·54
	υ Capricorni	41·2	55·2	9·1	23·2	37·2	31 9·18	+ 0·19	………	− 9·15	20 31 0·22
	α Cygni	33·6	52·2	10·8	29·5	48·3	36 10·88	− 0·07	9·21	− 9·15	20 36 1·66
	61 Cygni preceding	22·8	……	56·5	……	30·2	59 56·50	− 0·03	………	− 9·16	20 59 47·31
	61 Cygni following	……	40·8	……	14·6	……	59 57·70	− 0·03	………	− 9·16	20 59 48·51
Sept. 8	α Herculis	5·5	19·4	33·0	46·6	0·3	7 32·96	+ 0·08	9·35	− 9·48	17 7 23·56
	α Ophiuchi	15·3	28·7	42·4	56·1	9·7	27 42·44	+ 0·08	9·35	− 9·48	17 27 33·04
	δ Ursæ Minoris	……	……	……	……	25·0	23 57·90	− 3·23	9·53	− 9·50	18 23 45·17
	β Lyræ	50·7	6·6	22·5	38·4	54·4	44 22·52	0·00	9·59	− 9·50	18 44 13·02
	α Cygni	34·0	52·8	11·3	29·9	48·7	36 11·34	− 0·07	9·69	− 9·51	20 36 1·76
Sept. 9	ζ Aquilæ	48·7	2·3	15·8	29·6	43·2	58 15·92	+ 0·08	9·62	− 9·62	18 58 6·38
	α^2 Capricorni	56·6	10·2	23·8	37·6	51·0	9 23·84	+ 0·18	9·75	− 9·63	20 9 14·39
	α Cygni	……	52·6	11·3	30·2	48·8	36 11·38	− 0·07	9·75	− 9·63	20 36 1·68
	γ Capricorni	59·2	13·1	27·0	40·8	54·8	31 26·98	+ 0·19	………	− 9·65	21 31 17·52
	ε Pegasi	5·9	19·4	32·8	46·3	59·8	36 32·84	+ 0·09	9·59	− 9·65	21 36 23·28
	Moon 1 Limb	5·3	19·1	33·3	47·2	1·4	46 33·26	+ 0·18	………	− 9·65	21 46 23·79
	α Aquarii	20·4	33·7	47·1	0·6	13·8	57 47·12	+ 0·13	9·46	− 9·66	21 57 37·59
	σ Aquarii	57·2	……	24·4	37·8	51·2	22 24·26	+ 0·17	………	− 9·66	22 22 14·77
	Uranus	27·1	40·5	53·8	7·0	20·4	18 53·76	+ 0·15	………	− 9·68	23 18 44·23
	Mercury 2 Limb	41·6	55·2	8·7	22·4	36·0	25 8·78	+ 0·09	………	− 9·91	10 24 58·96
Sept. 10	Sun 1 Limb	47·0	0·4	……	27·6	40·6	14 13·90	+ 0·11	………	− 9·93	11 14 4·08
	Sun 2 Limb	55·2	8·5	21·8	35·3	48·7	16 21·90	+ 0·11	………	− 9·93	11 16 12·08
	α Ursæ Minoris S.P.	19·0	34·0	……	……	16·0	2 47·70	+ 7·56	8·53	− 9·96	13 2 45·30
	α Bootis	5·2	19·2	33·4	47·5	1·7	8 33·40	+ 0·06	9·85	− 9·99	14 8 23·47
	δ Ursæ Minoris	……	……	58·5	42·0	……	23 58·35	− 3·23	10·80	− 10·07	18 23 45·05
	β Lyræ	51·2	7·2	23·1	38·9	55·0	44 23·08	0·00	10·19	− 10·07	18 44 13·01
	ζ Aquilæ	49·1	2·7	16·4	30·1	43·7	58 16·40	+ 0·08	10·11	− 10·08	18 58 6·40
	γ Aquilæ	25·5	38·9	52·5	6·0	19·5	38 52·48	+ 0·09	10·17	− 10·08	19 38 42·49
	α Aquilæ	44·9	58·4	11·8	25·3	38·7	43 11·82	+ 0·10	10·05	− 10·08	19 43 1·84
	61 Cygni preceding	……	40·5	……	14·2	……	59 57·35	− 0·03	………	− 10·10	20 59 47·22
	61 Cygni following	25·1	……	58·8	……	32·4	59 58·77	− 0·03	………	− 10·10	20 59 48·64
	θ Aquarii	10·1	23·6	37·1	50·6	4·0	8 37·08	+ 0·16	………	− 10·11	22 8 27·13
	σ Aquarii	57·4	10·9	24·4	38·1	51·6	22 24·48	+ 0·17	………	− 10·11	22 22 14·54
	Moon 1 Limb	17·2	30·9	44·9	58·7	12·2	35 44·78	+ 0·16	………	− 10·11	22 35 34·83
	3 Piscium	13·0	26·3	39·6	52·8	6·0	52 39·54	+ 0·13	………	− 10·12	22 52 29·55
	φ Aquarii	49·3	2·5	16·0	29·4	42·8	6 16·00	+ 0·16	………	− 10·12	23 6 6·04
	Uranus	18·4	32·0	45·4	58·6	12·1	18 45·30	+ 0·15	………	− 10·12	23 18 35·33
	Mercury 2 Limb	29·4	42·8	56·4	10·1	……	31 56·47	+ 0·09	………	− 10·24	10 31 46·32
Sept. 11	Sun 1 Limb	23·2	36·4	49·9	3·4	16·8	17 49·94	+ 0·11	………	− 10·25	11 17 39·80
	Sun 2 Limb	31·3	44·7	58·0	11·3	24·8	19 58·02	+ 0·11	………	− 10·25	11 19 47·88
	Venus 1 Limb	3·2	17·0	30·2	43·7	56·8	9 30·18	+ 0·13	………	− 10·25	12 9 20·06
	α Ursæ Minoris S.P.	18·0	34·5	47·0	2·5	17·0	2 47·80	+ 7·56	8·22	− 10·26	13 2 45·10
	α Bootis	5·5	19·5	33·7	47·8	2·0	8 33·70	+ 0·06	10·16	− 10·27	14 8 23·49
	ε Bootis	41·8	56·7	11·8	27·0	42·0	38 11·86	+ 0·02	10·27	− 10·28	14 38 1·60
	δ Ursæ Minoris	31·0	15·0	59·0	43·0	27·0	23 59·00	− 3·23	11·77	− 10·33	18 23 45·44
	γ Aquilæ	25·6	39·1	52·6	6·1	19·6	38 52·60	+ 0·09	10·30	− 10·35	19 38 42·34
	α Aquilæ	45·4	58·8	12·2	25·5	39·0	43 12·18	+ 0·10	10·42	− 10·35	19 43 1·93

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Sept. 11	β Aquilæ	14·2	27·5	40·8	54·2	7·6	47 40·86	+ 0·11	− 10·40	− 10·36	19 47 30·61
	61 Cygni preceding	24·0	……	57·6	……	31·8	59 57·80	− 0·03	………	− 10·38	20 59 47·39
	61 Cygni following	……	42·1	……	15·9	……	59 59·00	− 0·03	………	− 10·38	20 59 48·59
	φ Aquarii	……	……	……	29·5	43·1	6 16·22	+ 0·16	………	− 10·42	23 6 5·96
	Moon 2 Limb	21·7	35·2	……	2·5	16·2	26 48·90	+ 0·14	………	− 10·43	23 26 38·61
	Mercury 2 Limb	22·2	35·6	49·1	2·6	16·2	38 49·14	+ 0·09	………	− 10·66	10 38 38·57
Sept. 12	Sun 1 Limb	59·2	12·5	26·0	39·2	52·7	21 25·92	+ 0·11	………	− 10·67	11 21 15·36
	Sun 2 Limb	7·1	20·5	33·7	47·2	0·6	23 33·82	+ 0·11	………	− 10·67	11 23 23·26
		INSTRUMENT REVERSED.									
	α Ursæ Minoris S.P.	……	……	49·0	2·0	17·0	2 48·20	+ 10·47	11·14	− 10·71	13 2 47·96
	α Bootis	5·8	20·0	34·2	48·3	2·5	8 34·16	+ 0·31	10·88	− 10·73	14 8 23·74
	α Coronæ Borealis	37·4	52·4	7·3	22·3	37·2	28 7·32	+ 0·27	10·91	− 10·76	15 27 56·83
	γ Aquilæ	25·6	39·2	52·5	6·1	19·6	38 52·60	+ 0·35	10·57	− 10·83	19 38 42·12
	α^2 Capricorni	57·3	10·8	24·6	38·3	52·0	9 24·60	+ 0·45	10·82	− 10·83	20 9 14·22
	α Cygni	34·9	53·6	12·2	30·9	49·6	36 12·24	+ 0·14	10·87	− 10·84	20 36 1·54
	61 Cygni preceding	……	40·8	……	14·6	……	59 57·70	+ 0·20	………	− 10·84	20 59 47·06
	61 Cygni following	25·5	……	59·3	……	33·0	59 59·27	+ 0·20	………	− 10·84	20 59 48·63
	Uranus	1·4	14·8	28·1	41·4	54·7	18 28·08	+ 0·42	………	− 10·86	23 18 17·64
	20 Piscium	30·8	44·1	57·4	10·7	24·2	39 57·44	+ 0·41	………	− 10·87	23 39 46·98
	ω Piscium	53·3	6·6	20·1	33·6	47·1	51 20·14	+ 0·37	………	− 10·87	23 51 9·64
Sept. 13	ι Piscium	31·4	44·8	57·9	11·5	24·8	31 58·08	+ 0·38	11·12	− 11·10	23 31 47·36
	α Andromedæ	52·0	7·4	22·2	37·5	52·6	0 22·34	+ 0·26	11·00	− 11·10	0 0 11·50
	γ Pegasi	47·6	1·2	14·8	28·6	42·4	5 14·92	+ 0·33	11·17	− 11·11	0 5 4·14
	δ Piscium	11·2	24·5	38·0	51·3	4·8	40 37·96	+ 0·37	………	− 11·12	0 40 27·21
	α Ursæ Minoris	38·5	……	7·5	23·0	37·0	3 7·70	− 9·63	9·96	− 11·13	1 2 46·94
	Moon 2 Limb	43·9	57·8	11·6	25·6	39·5	8 11·68	+ 0·36	………	− 11·14	1 8 0·90
Sept. 14	δ Ursæ Minoris	32·0	15·5	59·0	43·5	27·0	23 59·40	− 4·12	12·63	− 11·61	18 23 43·67
	β Lyræ	52·5	8·3	24·2	40·1	56·0	44 24·22	+ 0·23	11·65	− 11·62	18 44 12·83
	ε Pegasi	7·7	21·1	34·6	48·1	1·5	36 34·60	+ 0·36	11·64	− 11·70	21 36 23·26
	α Aquarii	22·5	35·8	49·1	2·5	15·7	57 49·12	+ 0·40	11·74	− 11·71	21 57 37·81
	Mercury 2 Limb	13·7	27·3	40·8	54·3	7·8	59 40·78	+ 0·36	………	− 12·01	10 59 29·13
Sept. 15	Sun 1 Limb	46·4	0·0	13·3	26·8	40·1	32 13·32	+ 0·39	………	− 12·02	11 32 1·69
	Sun 2 Limb	54·7	8·0	21·5	35·0	47·6	34 21·36	+ 0·39	………	− 12·02	11 34 9·73
	Venus 1 Limb	8·6	22·0	35·3	48·8	1·9	27 35·32	+ 0·41	………	− 12·04	12 27 23·69
	α Ursæ Minoris S.P.	22·0	36·5	50·5	5·5	20·5	2 51·00	+ 10·47	12·81	− 12·06	13 2 49·41
	η Bootis	49·4	3·2	17·3	31·3	45·5	47 17·34	+ 0·31	12·04	− 12·08	13 47 5·57
	α Bootis	7·1	21·3	35·4	49·4	3·6	8 35·36	+ 0·31	12·11	− 12·08	14 8 23·59
Sept. 17	(a) δ Ursæ Minoris	32·5	16·5	59·5	43·0	……	23 59·70	− 4·12	14·19	− 13·14	18 23 42·44
	ζ Aquilæ	51·6	5·3	19·0	32·6	46·4	58 18·98	+ 0·34	13·06	− 13·14	18 58 6·18
	α Aquilæ	47·7	1·2	14·5	28·1	41·5	43 14·60	+ 0·36	13·17	− 13·14	19 43 1·82
	β Aquilæ	16·5	29·8	43·3	56·6	10·0	47 43·24	+ 0·37	13·11	− 13·14	19 47 30·47
	ζ Cygni	53·4	8·6	24·0	39·3	54·6	6 23·98	+ 0·25	13·26	− 13·14	21 6 11·09
	α Pegasi	36·8	0·4	4·2	18·1	31·8	57 4·26	+ 0·33	13·09	− 13·14	22 56 51·45
	Uranus	19·5	32·7	46·0	59·3	12·6	17 46·02	+ 0·42	………	− 13·14	23 17 33·30
Sept. 18	Sun 1 Limb	34·1	47·3	0·5	14·0	27·4	43 0·66	+ 0·39	………	− 13·13	11 42 47·92
	Sun 2 Limb	42·1	55·3	8·7	22·1	35·4	45 8·72	+ 0·39	………	− 13·13	11 44 55·98
	Venus 1 Limb	43·6	57·0	10·2	23·6	36·8	41 10·24	+ 0·41	………	− 13·13	12 40 57·52
	α Ursæ Minoris S.P.	24·0	……	……	……	……	2 52·90	+ 10·47	13·66	− 13·13	13 2 50·24

(a) At 12^h 7^m removed a piece of wire from the jar of the pendulum.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Sept. 18	ζ Cygni	53·1	8·5	23·8	39·1	54·5	6 23·80	+ 0·25	−13·09	−13·12	21 6 10·93
	β Aquarii	57·6	11·3	24·6	38·0	51·2	23 24·54	+ 0·43	13·14	−13·12	21 23 11·85
	ε Pegasi	9·2	22·6	……	……	……	36 36·08	+ 0·36	13·14	−13·12	21 36 23·32
	α Aquarii	23·8	37·2	50·5	3·8	17·1	57 50·48	+ 0·40	13·10	−13·13	21 57 37·75
	Mercury 2 Limb	54·7	8·1	21·6	34·9	48·3	27 21·52	+ 0·38	………	−13·32	11 27 8·58
Sept. 19	Sun 1 Limb	9·4	22·8	36·1	49·5	2·7	46 36·10	+ 0·39	………	−13·33	11 46 23·16
	Sun 2 Limb	17·5	30·8	44·1	57·4	10·8	48 44·12	+ 0·39	………	−13·33	11 48 31·18
	α Ursæ Minoris S.P.	24·0	39·0	53·0	6·5	23·0	2 53·10	+10·47	13·54	−13·35	13 2 50·22
	α Bootis	8·4	22·5	36·6	50·6	4·8	8 36·58	+ 0·31	13·37	−13·36	14 8 23·53
	ε Bootis	44·6	59·8	14·7	29·7	44·8	38 14·72	+ 0·26	13·47	−13·37	14 38 1·61
	β Lyræ	53·8	9·7	25·8	41·9	57·8	44 25·80	+ 0·23	13·33	−13·39	18 44 12·64
Sept. 20	Moon 2 Limb	29·1	43·6	58·4	13·0	27·6	23 58·34	+ 0·22	………	−13·44	8 23 45·12
	δ Cancri	22·6	36·6	50·7	4·6	18·6	35 50·62	+ 0·32	………	−13·44	8 35 37·50
	ε Hydræ	6·3	19·6	33·0	46·4	59·8	38 33·02	+ 0·37	13·37	−13·44	8 38 19·95
Sept. 21	Sun 1 Limb	……	34·2	47·4	0·7	14·1	53 47·44	+ 0·40	………	−13·45	11 53 34·39
	Sun 2 Limb	28·8	42·2	55·4	8·8	22·0	55 55·44	+ 0·40	………	−13·45	11 55 42·39
	Venus 1 Limb	19·7	32·8	46·2	59·7	13·1	54 46·30	+ 0·42	………	−13·45	12 54 33·27
	α Ursæ Minoris S.P.	24·5	……	53·0	7·0	……	2 52·93	+10·47	12·74	−13·45	13 2 49·95
	ε Bootis	44·7	59·7	14·8	29·8	44·9	38 14·78	+ 0·26	13·55	−13·45	14 38 1·59
	α Coronæ Borealis	39·8	55·0	9·7	……	……	28 9·78	+ 0·27	13·52	−13·45	15 27 56·60
	δ Ursæ Minoris	31·0	14·5	58·0	……	……	23 58·20	− 4·12	14·39	−13·49	18 23 40·59
	γ Aquilæ	28·3	41·8	55·4	8·7	22·3	38 55·30	+ 0·35	13·40	−13·51	19 38 42·14
	α Aquilæ	47·8	1·3	14·8	28·3	41·8	43 14·80	+ 0·36	13·43	−13·51	19 43 1·65
Sept. 23	Sun 1 Limb	32·7	46·0	59·4	12·8	26·1	0 59·40	+ 0·40	………	−14·13	12 0 45·67
	Sun 2 Limb	40·8	54·1	7·4	20·8	34·1	3 7·44	+ 0·40	………	−14·13	12 2 53·71
	α Ursæ Minoris S.P.	25·5	39·0	……	9·5	23·5	2 54·45	+10·47	13·69	−14·14	13 2 50·78
	Venus 1 Limb	25·8	39·2	52·6	6·0	19·4	3 52·60	+ 0·42	………	−14·14	13 3 38·88
	η Bootis	51·2	5·3	19·4	33·6	47·6	47 19·42	+ 0·31	14·17	−14·15	13 47 5·58
	α Bootis	9·0	23·1	37·2	51·4	5·5	8 37·24	+ 0·31	14·06	−14·16	14 8 23·39
	ε Bootis	45·4	0·4	15·4	30·5	45·5	38 15·44	+ 0·26	14·24	−14·16	14 38 1·54
Sept. 24	Sun 1 Limb	9·0	22·3	35·6	49·0	2·2	4 35·62	+ 0·40	………	−14·27	12 4 21·75
	Sun 2 Limb	17·1	30·4	43·7	57·1	10·3	6 43·72	+ 0·40	………	−14·27	12 6 29·85
	α Ursæ Minoris S.P.	……	……	57·5	12·0	……	2 57·30	+10·47	16·27	−14·28	13 2 53·49
	α Coronæ Borealis	40·7	55·6	10·5	25·5	40·4	28 10·54	+ 0·27	14·33	−14·29	15 27 56·52
	α^2 Capricorni	0·6	14·4	28·0	41·6	55·4	9 28·00	+ 0·45	14·36	−14·31	20 9 14·14
	α Cygni	38·1	56·7	15·5	34·2	52·8	36 15·46	+ 0·14	14·33	−14·31	20 36 1·29
	ζ Cygni	54·3	9·5	24·8	40·2	55·5	6 24·86	+ 0·25	14·23	−14·31	21 6 10·80
	β Aquarii	58·9	12·3	25·6	39·0	52·4	23 25·64	+ 0·43	14·29	−14·31	21 23 11·76
Sept. 25	Sun 1 Limb	45·1	58·4	11·8	25·0	38·3	8 11·72	+ 0·40	………	−14·31	12 7 57·81
	Sun 2 Limb	53·3	6·6	19·8	33·2	46·6	10 19·90	+ 0·40	………	−14·31	12 10 5·99
	α Ursæ Minoris S.P.	27·0	39·5	56·5	11·0	……	2 55·85	+10·47	14·57	−14·31	13 2 52·01
	α Bootis	9·4	23·4	37·5	51·6	5·7	8 37·52	+ 0·31	14·35	−14·31	14 8 23·52
	ε Bootis	45·6	0·6	15·7	30·7	45·8	38 15·68	+ 0·26	14·50	−14·31	14 38 1·63
	δ Ursæ Minoris	30·0	14·0	57·0	42·0	24·5	23 57·50	− 4·12	15·40	−14·31	18 23 39·07
	α Cygni	38·1	56·8	15·3	34·1	52·6	36 15·38	+ 0·14	14·27	−14·30	20 36 1·22
	ζ Cygni	54·2	9·5	24·7	40·0	55·4	6 24·76	+ 0·25	14·14	−14·30	21 6 10·71
	β Aquarii	58·8	12·3	25·6	39·1	52·3	23 25·62	+ 0·43	14·27	−14·30	21 23 11·75
	Uranus	11·1	24·6	37·9	51·4	4·6	16 37·92	+ 0·42	………	−14·30	23 16 24·04
Sept. 26	δ Ursæ Minoris	30·0	12·5	57·0	41·0	24·0	23 56·90	− 4·12	15·23	−14·24	18 23 38·54
	β Lyræ	55·0	10·8	26·6	42·6	58·5	44 26·70	+ 0·23	14·39	−14·24	18 44 12·69
	ζ Aquilæ	52·7	6·4	20·1	33·7	47·4	58 20·06	+ 0·34	14·29	−14·24	18 58 6·16

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	r.	s.	m. s.	s.	s.	s.	h. m. s.
Sept. 26	α Cygni	37·9	56·7	15·3	34·1	52·7	36 15·34	+ 0·14	–14·25	–14·24	20 36 1·24
	ζ Cygni	54·3	9·4	24·7	40·0	55·2	6 24·72	+ 0·25	14·12	–14·24	21 6 10·73
	β Aquarii	58·7	12·1	25·4	39·0	52·3	23 25·50	+ 0·43	14·16	–14·25	21 23 11·68
	Uranus	2·8	16·2	29·5	43·0	56·4	16 29·58	+ 0·42	………	–14·25	23 16 15·75
Sept. 28	Sun 1 Limb	34·8	48·0	1·2	14·4	27·5	19 1·18	+ 0·41	………	–14·41	12 18 47·18
	Sun 2 Limb	42·8	56·0	9·4	22·8	36·2	21 9·44	+ 0·41	………	–14·41	12 20 55·44
	α Cygni	38·2	57·0	15·5	34·4	52·8	36 15·58	+ 0·14	14·53	–14·45	20 36 1·27
	ζ Cygni	54·4	9·6	25·0	40·2	55·3	6 24·90	+ 0·25	14·33	–14·45	21 6 10·70
	ε Pegasi	10·4	23·9	37·3	50·6	4·1	36 37·26	+ 0·36	14·40	–14·45	21 36 23·17
	α Pegasi	38·2	52·0	5·7	19·4	33·2	57 5·70	+ 0·33	14·53	–14·51	22 56 51·52
Sept. 29	Venus 1 Limb	56·2	10·0	23·3	36·8	50·2	31 23·30	+ 0·44	………	–15·16	13 31 8·58
	α Lyræ	14·3	31·4	48·4	5·3	22·3	31 48·34	+ 0·19	15·44	–15·38	18 31 33·15
	ζ Cygni	55·5	10·7	26·0	41·4	56·5	6 26·02	+ 0·25	15·46	–15·50	21 6 10·77
	β Aquarii	0·1	13·4	26·7	40·2	53·5	23 26·78	+ 0·43	15·47	–15·52	21 23 11·69
	α Aquarii	26·3	39·5	52·8	6·1	19·4	57 52·82	+ 0·40	15·51	–15·55	21 57 37·67
	ζ Pegasi	21·1	34·5	48·0	1·6	15·1	33 48·06	+ 0·35	15·63	–15·59	22 33 32·82
	Uranus	39·2	52·6	6·1	19·5	32·8	16 6·04	+ 0·42	………	–15·64	23 15 50·82
Sept. 30	β Lyræ	57·6	13·5	29·4	45·2	1·1	44 29·36	+ 0·23	17·14	–16·86	18 44 12·73
	ζ Aquilæ	55·2	9·1	22·7	36·2	50·0	58 22·64	+ 0·34	16·94	–16·87	18 58 6·11
	δ Aquilæ	18·6	31·9	45·2	58·6	11·8	17 45·22	+ 0·39	16·78	–16·89	19 17 28·72
	α Cygni	40·7	59·3	17·8	36·6	55·2	36 17·92	+ 0·14	16·92	–16·95	20 36 1·11
	ζ Cygni	56·8	12·2	27·5	42·7	58·1	6 27·46	+ 0·25	16·91	–16·96	21 6 10·75
	β Aquarii	1·5	14·8	28·3	41·6	55·0	23 28·24	+ 0·43	16·94	–16·96	21 23 11·71
	Uranus	32·6	46·0	59·4	12·7	26·1	15 59·36	+ 0·42	………	–16·99	23 15 42·79
Oct. 1	Sun 2 Limb	……	50·8	4·1	17·4	30·6	32 4·06	+ 0·41	………	–17·20	12 31 47·27
	α Bootis	12·2	26·3	46·5	54·7	8·8	8 40·50	+ 0·31	17·37	–17·22	14 8 23·59
	δ Ursæ Minoris	30·0	……	……	……	……	23 57·20	– 4·12	17·69	–17·29	18 23 35·79
	α Cygni	41·0	59·6	18·2	36·9	55·6	36 18·26	+ 0·14	17·28	–17·32	20 36 1·08
	ζ Cygni	57·4	12·5	27·7	43·1	58·4	6 27·82	+ 0·25	17·29	–17·33	21 6 10·74
	ε Pegasi	13·2	26·5	40·1	53·6	7·1	36 40·10	+ 0·36	17·27	–17·33	21 36 23·13
	α Aquarii	28·0	41·4	54·6	8·1	21·4	57 54·70	+ 0·40	17·40	–17·33	21 57 37·77
	ζ Pegasi	22·8	36·2	49·7	3·3	16·8	33 49·76	+ 0·35	17·34	–17·34	22 33 32·77
	Uranus	24·8	38·2	51·4	4·8	18·1	15 51·46	+ 0·42	………	–17·35	23 15 34·53
Oct. 2	Sun 1 Limb	6·9	20·1	33·4	46·8	0·1	33 33·46	+ 0·41	………	–17·47	12 33 16·40
	Sun 2 Limb	15·3	28·5	42·1	55·6	8·8	35 42·06	+ 0·41	………	–17·47	12 35 25·00
	α Ursæ Minoris S. P.	……	44·5	……	16·5	31·0	3 1·07	+10·47	18·35	–17·48	13 2 54·06
	α Coronæ Borealis	43·8	58·7	13·6	28·6	43·7	28 13·68	+ 0·27	17·58	–17·50	15 27 56·45
	α Herculis	13·2	26·8	40·4	54·2	8·0	7 40·52	+ 0·33	17·57	–17·52	17 7 23·33
	δ Ursæ Minoris	30·0	14·0	58·0	42·0	25·0	23 57·80	– 4·12	18·72	–17·53	18 23 36·15
	β Lyræ	58·0	13·8	29·8	45·7	1·7	44 29·80	+ 0·23	17·63	–17·53	18 44 12·50
	ζ Cygni	57·4	12·7	28·1	43·3	58·6	6 28·02	+ 0·25	17·51	–17·56	21 6 10·71
	ε Pegasi	13·1	26·5	40·3	53·7	7·4	36 40·20	+ 0·36	17·38	–17·57	21 36 22·99
	Uranus	17·0	30·2	43·6	57·0	10·4	15 43·64	+ 0·42	………	–17·59	23 15 26·47
Oct. 3	Sun 1 Limb	……	58·5	11·8	25·2	……	37 11·84	+ 0·42	………	–17·78	12 36 54·48
	λ Sagittarii	57·2	11·6	26·6	41·3	56·0	18 26·54	+ 0·52	………	–17·87	18 18 9·19
	δ Ursæ Minoris	30·0	14·0	57·5	41·5	25·0	23 57·60	– 4·12	18·95	–17·87	18 23 35·61
	β Lyræ	58·5	14·3	30·1	46·1	1·8	44 30·16	+ 0·23	18·01	–17·87	18 44 12·52
	Moon 1 Limb	8·0	23·1	38·8	54·2	9·7	47 38·76	+ 0·56	………	–17·87	18 47 21·45
	ζ Aquilæ	56·3	9·8	23·5	37·3	50·8	58 23·54	+ 0·34	18·00	–17·88	18 58 6·00
	π Sagittarii	7·1	21·2	35·6	50·0	4·2	0 35·62	+ 0·50	………	–17·88	19 0 18·24
	δ Aquilæ	19·6	33·0	46·3	59·5	12·7	17 46·22	+ 0·39	17·83	–17·88	19 17 28·73
	52 Sagittarii	49·5	4·2	19·0	33·6	48·3	27 18·92	+ 0·52	………	–17·88	19 27 1·56

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Oct. 3	γ Aquilæ	32·4	46·0	59·4	13·0	26·5	38 59·46	+ 0·35	− 17·75	− 17·88	19 38 41·93
	α Aquilæ	52·2	5·5	19·0	32·5	45·8	43 19·00	+ 0·36	17·82	− 17·88	19 43 1·48
Oct. 5	Sun 1 Limb	2·3	15·5	29·0	42·3	55·8	44 28·98	+ 0·42	......	− 18·29	12 44 11·11
	Sun 2 Limb	11·4	24·6	38·0	......	......	46 38·04	+ 0·42	......	− 18·29	12 46 20·17
	α Ursæ Minoris S.P.	......	......	3·0	16·0	32·5	3 2·07	+ 10·47	18·91	− 18·29	13 2 54·25
	Mercury 1 Limb	30·0	43·4	56·8	10·4	23·8	9 56·88	+ 0·43	......	− 18·29	13 9 39·02
	Venus 1 Limb	54·8	8·4	22·0	35·6	49·1	59 21·98	+ 0·45	......	− 18·30	13 59 4·13
	α Bootis	13·3	27·4	41·6	55·6	9·7	8 41·52	+ 0·31	18·40	− 18·30	14 8 23·53
	ζ Cygni	58·0	13·4	28·8	44·2	59·5	6 28·78	+ 0·25	18·31	− 18·37	21 6 10·66
	β Aquarii	2·7	16·3	29·6	43·2	56·5	23 29·66	+ 0·43	18·41	− 18·37	21 23 11·72
	α Aquarii	29·0	42·3	55·5	9·0	22·0	57 55·56	+ 0·40	18·29	− 18·37	21 57 37·59
	ζ Pegasi	23·7	37·4	50·7	4·4	17·7	33 50·78	+ 0·35	18·38	− 18·37	22 33 32·76
Oct 6	Sun 1 Limb	41·4	55·0	8·3	21·5	35·0	48 8·24	+ 0·42	......	− 18·46	12 47 50·20
	Sun 2 Limb	50·7	4·0	17·4	30·8	44·0	50 17·38	+ 0·42	......	− 18·46	12 49 59·34
	α Ursæ Minoris S.P.	......	48·5	3·0	......	33·0	3 3·13	+ 10·47	19·83	− 18·46	13 2 55·14
	γ Aquilæ	33·1	46·6	0·1	13·7	27·1	39 0·12	+ 0·35	18·46	− 18·50	19 38 41·97
	α Aquilæ	52·7	6·0	19·5	33·0	46·4	43 19·52	+ 0·36	18·38	− 18·50	19 43 1·38
	β Aquilæ	21·6	35·0	48·3	1·6	14·8	47 48·26	+ 0·37	18·41	− 18·50	19 47 30·13
	Moon 1 Limb	30·2	44·5	58·8	12·9	27·1	23 58·70	+ 0·48	......	− 18·52	21 23 40·66
	ε Pegasi	......	27·8	41·6	55·0	8·2	36 41·43	+ 0·36	18·65	− 18·52	21 36 23·27
	δ Capricorni	......	20·6	34·2	48·5	2·0	38 34·39	+ 0·47	......	− 18·52	21 38 16·34
	ζ Pegasi	24·0	37·6	51·1	4·5	18·0	33 51·04	+ 0·35	18·64	− 18·53	22 33 32·86
Oct. 7	Mercury 1 Limb	......	......	58·3	12·0	25·4	21 58·43	+ 0·43	......	− 18·67	13 21 40·19
	δ Ursæ Minoris	......	13·0	26·5	40·5	24·5	23 56·85	− 4·12	19·92	− 18·72	18 23 34·01
	β Lyræ	59·3	15·2	31·0	46·9	2·8	44 31·04	+ 0·23	18·98	− 18·72	18 44 12·55
	γ Aquilæ	33·5	46·9	0·4	13·9	27·3	39 0·40	+ 0·35	18·76	− 18·73	19 38 42·02
	ζ Cygni	58·5	13·6	28·9	44·2	59·5	6 28·94	+ 0·25	18·50	− 18·75	21 6 10·44
	β Aquarii	3·0	16·4	30·0	43·5	56·9	23 29·96	+ 0·43	18·73	− 18·75	21 23 11·64
	Moon 1 Limb	46·8	0·4	......	......	42·1	13 14·43	+ 0·46	......	− 18·76	22 12 56·13
	η Aquarii	3·8	17·1	30·4	43·6	56·8	27 30·34	+ 0·40	......	− 18·77	22 27 11·97
	ζ Pegasi	24·2	37·6	51·1	4·5	18·1	33 51·10	+ 0·35	18·71	− 18·77	22 33 32·68
	λ Aquarii	......	......	38·2	51·7	5·2	44 38·28	+ 0·43	......	− 18·77	22 44 19·94
	Uranus	38·9	52·2	5·7	18·9	32·3	15 5·60	+ 0·42	......	− 18·78	23 14 47·24
	⁎ D. + 49° 55′	29·4	50·0	10·6	31·2	51·7	2 10·58	+ 0·09	......	− 18·79	0 1 51·88
Oct. 8	α Ursæ Minoris S.P.	......	......	......	17·5	34·5	3 3·35	+ 10·47	19·83	− 18·99	13 2 54·83
	Venus 1 Limb	4·4	18·2	31·8	45·7	59·3	13 31·88	+ 0·45	......	− 19·01	14 13 13·32
	ε Bootis	50·1	5·2	20·4	35·4	50·3	38 20·28	+ 0·26	19·20	− 19·01	14 38 1·53
	α Coronæ Borealis	45·3	0·3	15·2	30·1	44·9	28 15·16	+ 0·27	19·13	− 19·02	15 27 56·41
	δ Ursæ Minoris	28·5	12·5	56·5	41·0	24·0	23 56·50	− 4·12	20·00	− 19·07	18 23 33·31
	β Lyræ	59·5	15·3	31·1	47·0	3·0	44 31·18	+ 0·23	19·14	− 19·07	18 44 12·34
	β Aquarii	3·5	16·7	30·0	43·4	57·0	23 30·12	+ 0·43	18·90	− 19·09	21 23 11·46
	α Aquarii	29·6	43·0	56·2	9·6	22·8	57 56·24	+ 0·40	19·00	− 19·09	21 57 37·55
	η Aquarii	3·8	17·3	30·5	43·8	57·1	27 30·50	+ 0·40	......	− 19·09	22 27 11·81
	λ Aquarii	11·5	24·8	38·2	51·6	5·2	44 38·26	+ 0·43	......	− 19·10	22 44 19·59
	Moon 1 Limb	40·8	54·4	8·1	21·8	35·4	2 8·10	+ 0·43	......	− 19·10	23 1 49·43
	Uranus	31·8	45·0	58·5	11·8	25·1	14 58·44	+ 0·42	......	− 19·10	23 14 39·76
	$\varkappa^1$ Piscium	39·8	53·2	6·4	19·6	33·0	19 6·40	+ 0·40	......	− 19·10	23 18 47·70
	λ Piscium	49·1	2·4	15·6	28·8	42·2	34 15·62	+ 0·40	......	− 19·10	23 33 56·92
	⁎ D. + 49° 55′	29·6	50·2	10·6	31·2	51·8	2 10·68	+ 0·09	......	− 19·10	0 1 51·67
Oct. 9	Sun 1 Limb	41·5	55·0	8·3	21·8	35·1	59 8·34	+ 0·43	......	− 19·18	12 58 49·59
	Sun 2 Limb	51·0	4·4	17·8	31·2	44·5	1 17·78	+ 0·43	......	− 19·18	13 0 59·03
	α Ursæ Minoris S.P.	32·0	46·0	3·5	17·0	......	3 2·20	+ 10·47	18·59	− 19·18	13 2 53·49
	Mercury 1 Limb	......	......	53·2	6·8	20·2	34 53·20	+ 0·44	......	− 19·18	13 34 34·46

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Oct. 9	α Bootis	14·1	28·3	42·5	56·5	10·7	8 42·42	+ 0·31	− 19·31	− 19·19	14 8 23·54
	Venus 1 Limb	49·8	3·4	17·0	30·8	44·7	18 17·14	+ 0·45	……	− 19·19	14 17 58·40
	α Coronæ Borealis	45·4	0·4	15·3	30·2	45·0	28 15·26	+ 0·27	19·24	− 19·19	15 27 56·34
	δ Ursæ Minoris	28·5	12·5	56·5	40·0	23·5	23 56·20	− 4·12	20·13	− 19·21	18 23 32·87
	β Lyræ	59·5	15·4	31·3	47·1	3·1	44 31·28	+ 0·23	19·26	− 19·21	18 44 12·30
	ζ Cygni	59·0	14·3	29·5	44·8	0·1	6 29·54	+ 0·25	19·13	− 19·21	21 6 10·58
	β Aquarii	3·5	17·1	30·3	43·6	57·0	23 30·30	+ 0·43	19·09	− 19·21	21 23 11·52
	Uranus	24·5	38·0	51·4	4·7	……	14 51·32	+ 0·42	……	− 19·20	23 14 32·54
	$\varkappa^1$ Piscium	39·8	53·3	6·5	19·8	33·2	19 6·52	+ 0·40	……	− 19·20	23 18 47·72
	λ Piscium	49·2	2·2	15·4	……	42·2	34 15·58	+ 0·40	……	− 19·20	23 33 56·78
	Moon 1 Limb	15·4	29·0	42·6	56·3	9·9	51 42·64	+ 0·40	……	− 19·20	23 51 23·84
	⁎ D. + 49° 55′	29·5	50·1	10·7	31·4	51·8	2 10·70	+ 0·09	……	− 19·20	0 1 51·59
	35 Piscium	40·5	53·9	7·4	20·6	34·1	7 7·30	+ 0·36	……	− 19·20	0 6 48·46
Oct. 10	Sun 1 Limb	22·4	35·7	49·2	2·6	16·1	2 49·20	+ 0·43	……	− 19·19	13 2 30·44
	Sun 2 Limb	31·9	45·2	58·6	12·2	25·5	4 58·68	+ 0·43	……	− 19·19	13 4 39·92
	α Pegasi	42·8	56·6	10·3	24·1	37·7	57 10·30	+ 0·33	19·18	− 19·18	22 56 51·45
	Uranus	17·1	30·6	44·0	57·5	10·8	14 44·00	+ 0·42	……	− 19·18	23 14 25·24
Oct. 11	(*a*) β Ceti	28·2	42·1	56·1	10·1	24·0	35 56·10	+ 0·48	18·93	− 19·17	0 35 37·41
	ε Piscium	34·8	48·2	1·4	14·7	28·2	55 1·46	+ 0·37	……	− 19·17	0 54 42·66
	α Ursæ Minoris	……	……	27·0	38·5	50·0	3 23·30	− 9·63	19·49	− 19·17	1 2 54·50
	θ^1 Ceti	57·8	11·2	24·6	38·1	51·4	16 24·62	+ 0·44	19·22	− 19·17	1 16 5·89
	η Piscium	51·6	5·2	19·0	32·6	46·6	23 19·00	+ 0·33	……	− 19·17	1 23 0·16
	Moon 2 Limb	35·6	49·5	3·6	17·8	32·0	40 3·70	+ 0·34	……	− 19·17	1 39 44·87
	α Arietis	4·5	19·1	33·5	48·0	2·1	58 33·44	+ 0·29	19·35	− 19·17	1 58 14·56
	α Ursæ Minoris S.P.	……	47·5	4·0	……	34·5	3 3·60	+ 10·47	19·81	− 19·17	13 2 54·90
Oct. 12	Sun 1 Limb	44·9	58·5	11·8	25·2	38·8	10 11·84	+ 0·43	……	− 19·17	13 9 53·10
	Sun 2 Limb	54·7	8·2	21·6	35·2	48·6	12 21·66	+ 0·43	……	− 19·17	13 12 2·92
	Mercury 1 Limb	8·4	22·2	35·7	49·3	3·0	51 35·72	+ 0·45	……	− 19·17	13 51 17·00
	α Bootis	14·1	28·2	42·4	56·5	10·6	8 42·36	+ 0·31	19·25	− 19·17	14 8 23·50
	Venus 1 Limb	……	24·7	38·5	52·3	6·2	32 38·54	+ 0·46	……	− 19·17	14 32 19·83
	ε Bootis	50·1	5·3	20·3	35·4	50·4	38 20·30	+ 0·26	19·24	− 19·17	14 38 1·39
	δ Ursæ Minoris	28·0	11·5	54·0	39·0	22·5	23 55·00	− 4·12	20·20	− 19·17	18 23 31·71
	β Lyræ	59·5	15·3	31·2	47·0	3·0	44 31·20	+ 0·23	19·25	− 19·17	18 44 12·26
	ζ Pegasi	24·3	38·0	51·4	5·0	18·4	33 51·42	+ 0·35	19·07	− 19·13	22 33 32·64
	α Pegasi	42·6	56·5	10·1	24·0	37·5	57 10·14	+ 0·33	19·03	− 19·13	22 56 51·34
	Uranus	2·7	16·2	29·5	42·8	56·2	14 29·48	+ 0·42	……	− 19·12	23 14 10·78
	α Ursæ Minoris	52·0	4·5	20·0	36·5	52·0	3 21·00	− 9·63	17·09	− 19·10	1 2 52·27
	θ^1 Arietis	8·7	23·1	37·0	51·2	5·2	9 37·04	+ 0·31	……	− 19·09	2 9 18·26
	ψ Arietis	57·4	11·3	25·5	……	53·2	22 25·32	+ 0·32	……	− 19·09	2 22 6·55
	Moon 2 Limb	21·5	36·2	50·8	5·2	20·0	38 50·74	+ 0·32	……	− 19·09	2 38 31·97
	α Ursæ Minoris S.P.	33·5	48·0	3·0	18·0	33·5	3 3·20	+ 10·47	19·37	− 18·98	13 2 54·69
Oct. 13	Sun 1 Limb	26·6	40·0	53·4	7·1	20·5	13 53·52	+ 0·43	……	− 18·98	13 13 34·97
	Sun 2 Limb	36·8	50·2	3·6	17·1	30·5	16 3·64	+ 0·43	……	− 18·98	13 15 45·09
	Mercury 1 Limb	0·3	14·0	27·6	41·3	54·9	57 27·62	+ 0·45	……	− 18·97	13 57 9·10
	α Bootis	13·9	28·0	42·1	56·3	10·5	8 42·16	+ 0·31	19·05	− 18·97	14 8 23·50
	Venus 1 Limb	0·0	13·8	27·8	41·5	55·3	37 27·68	+ 0·46	……	− 18·97	14 37 9·17
	α Coronæ Borealis	……	……	15·1	29·9	44·8	28 14·99	+ 0·27	19·00	− 18·96	15 27 56·30
	α Lyræ	17·6	34·7	51·6	8·7	25·5	31 51·62	+ 0·19	19·06	− 18·93	18 31 32·88
	α Andromedæ	0·1	15·1	30·2	45·4	0·2	0 30·20	+ 0·26	18·72	− 18·89	0 0 11·57
	γ Pegasi	55·4	9·0	22·5	36·3	50·1	5 22·66	+ 0·33	18·75	− 18·89	0 5 4·10
	α Ursæ Minoris S.P.	33·0	47·0	3·0	……	……	3 2·93	+ 10·47	19·08	− 18·80	13 2 54·60
Oct. 14	Sun 1 Limb	9·2	22·7	36·1	49·7	3·0	17 36·14	+ 0·43	……	− 18·80	13 17 17·77
	Sun 2 Limb	19·4	32·8	46·3	59·6	13·2	19 46·26	+ 0·43	……	− 18·80	13 19 27·89

(*a*) Removed remaining pieces of brass wire from lid of jar.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Oct. 14	Venus 1 Limb	50·1	4·2	17·9	31·8	45·8	42 17·96	+ 0·46	......	– 18·79	14 41 59·63
	α Coronæ Borealis	44·9	59·9	14·8	29·8	44·8	28 14·84	+ 0·27	– 18·86	– 18·79	15 27 56·32
	α Lyræ	17·5	34·5	51·4	8·6	25·5	31 51·50	+ 0·19	18·97	– 18·77	18 31 32·92
	β Lyræ	59·0	14·8	30·7	46·5	2·4	44 30·68	+ 0·23	18·77	– 18·76	18 44 12·15
	ε Pegasi	14·5	28·0	41·4	54·8	8·2	36 41·38	+ 0·36	18·69	– 18·76	21 36 22·98
	α Aquarii	29·2	42·4	55·5	9·0	22·4	57 55·70	+ 0·40	18·52	– 18·76	21 57 37·34
	Uranus	48·2	1·8	15·1	28·4	41·8	14 15·06	+ 0·42	......	– 18·76	23 13 56·72
Oct. 15		INSTRUMENT REVERSED.									
	α Ursæ Minoris S.P.	32·5	47·5	3·0	19·5	......	3 3·30	+ 10·89	19·85	– 18·70	13 2 55·49
Oct. 16	Sun 1 Limb	35·9	49·4	2·8	16·4	29·8	25 2·86	+ 0·47	......	– 18·70	13 24 44·63
	Sun 2 Limb	46·6	0·1	13·4	27·0	40·5	27 13·52	+ 0·47	......	– 18·70	13 26 55·29
Oct. 17	Sun 1 Limb	20·1	33·6	47·2	0·8	14·2	28 47·18	+ 0·48	......	– 18·68	13 28 28·98
	Sun 2 Limb	30·8	44·3	58·0	11·4	25·1	30 57·92	+ 0·48	......	– 18·68	13 30 39·72
	η Bootis	55·6	9·6	23·8	37·8	52·0	47 23·76	+ 0·33	18·53	– 18·68	13 47 5·41
	α Aquilæ	53·0	6·5	19·8	33·3	46·6	43 19·84	+ 0·39	18·91	– 18·65	19 43 1·58
	α Cygni	41·6	0·5	19·3	37·8	56·5	36 19·14	+ 0·17	18·57	– 18·65	20 36 0·66
Oct. 18	η Cancri	19·7	33·5	47·9	2·0	16·2	23 47·86	+ 0·32	......	– 18·30	8 23 29·88
	δ Cancri	28·1	42 0	56·1	10·0	24·4	35 56·12	+ 0·33	......	– 18·30	8 35 38·15
	ε Hydræ	11·6	25·1	38·6	52·1	5·5	38 38·58	+ 0·40	18·19	– 18·30	8 38 20·68
	Moon 2 Limb	21·8	36·2	50·6	5·0	19·3	3 50·58	+ 0·35	......	– 18·29	9 3 32·64
	α Hydræ	......	49·8	3·5	16·7	30·4	20 3·39	+ 0·47	18·08	– 18·29	9 19 45·57
	ο Leonis	29·8	43·1	56·6	10·3	23·8	32 56·72	+ 0·38	......	– 18·29	9 32 38·81
	ε Leonis	37·0	51·6	6·2	20·6	35·5	37 6·18	+ 0·30	18·13	– 18·29	9 36 48·19
	α Leonis	43·8	57·3	11·1	24·6	38·4	0 11·04	+ 0·36	18·20	– 18·29	9 59 53·11
	12 Canum Venat.	17·3	34·5	51·6	8·6	25·7	48 51·54	+ 0·20	18·15	– 18·26	12 48 33·48
	α Ursæ Minoris S.P.	33·5	49·0	5·0	20·5	36·0	3 4·80	+ 10·89	21·40	– 18·26	13 2 57·43
Oct. 19	Sun 1 Limb	50·2	3·8	17·5	31·1	44·5	36 17·42	+ 0·48	......	– 18·25	13 35 59·65
	Sun 2 Limb	1·5	15·0	28·6	42·1	55·7	38 28·58	+ 0·48	......	– 18·25	13 38 10·81
	α Bootis	13·3	27·1	41·2	55·4	9·5	8 41·30	+ 0·33	18·20	– 18·24	14 8 23·39
	Mercury 1 Limb	......	13·3	26·7	41·0	54·8	32 27·00	+ 0·51	......	– 18·24	14 32 9·27
	Venus 1 Limb	19·3	33·3	47·5	1·4	15·4	6 47·38	+ 0·52	......	– 18·23	15 6 29·67
	α Coronæ Borealis	44·2	59·3	14·2	29·1	44·1	28 14·18	+ 0·29	18·26	– 18·23	15 27 56·24
	δ Ursæ Minoris	23·5	......	50·0	33·5	17·5	23 50·15	– 4·27	18·14	– 18·21	18 23 27·67
	β Aquilæ	21·2	34·6	48·1	1·4	14·7	47 48·00	+ 0·40	18·39	– 18·20	19 47 30·20
	α Aquarii	29·0	42·2	55·5	8·8	22·1	57 55·52	+ 0·43	18·43	– 18·18	21 57 37·77
	ζ Pegasi	23·7	37·0	50·6	4·1	17·6	33 50·60	+ 0·38	18·34	– 18·17	22 33 32·81
	α Ursæ Minoris	55·0	8·0	23·5	37·5	53·0	3 23·40	– 10·01	19·12	– 18·15	1 2 55·24
	Moon 2 Limb	56·8	10·7	24·6	38·6	52·5	57 24·64	+ 0·38	......	– 18·08	9 57 6·94
	α Leonis	43·7	57·2	10·8	24·5	38·2	0 10·88	+ 0·36	18·01	– 18·08	9 59 53·16
Oct. 20	Sun 1 Limb	36·8	50·2	3·8	17·3	30·8	40 3·78	+ 0·48	......	– 18·05	13 39 46·21
	Sun 2 Limb	48·1	1·4	15·0	28·5	42·1	42 15·02	+ 0·48	......	– 18·05	13 41 57·45
	(*a*) α Bootis	13·9	27·1	41·2	55·2	9·4	8 41·16	+ 0·33	18·06	– 18·04	14 8 23·45
	Venus 1 Limb	16·8	30·8	44·9	58·8	13·0	11 44·86	+ 0·52	......	– 18·03	15 11 27·35
	α Coronæ Borealis	44·0	58·8	13·8	28·8	43·8	28 13·84	+ 0·29	17·93	– 18·03	15 27 56·10
	δ Ursæ Minoris	23·0	6·0	51·0	33·5	17·5	23 50·20	– 4·27	18·61	– 18·01	18 23 27·92
	α Aquarii	28·6	41·9	55·2	8·3	21·6	57 55·12	+ 0·43	18·04	– 17·97	21 57 37·58
	α Andromedæ	59·4	14·3	29·5	44·7	59·7	0 29·52	+ 0·28	18·07	– 17·94	0 0 11·86
Oct. 21	12 Canum Venat.	16·7	33·7	50·8	8·0	25·2	48 50·88	+ 0·20	17·44	– 17·53	12 48 33·55
	α Ursæ Minoris S.P.	30·5	45·0	1·0	18·0	33·0	3 1·50	+ 10·89	18·28	– 17·53	13 2 54·86

(*a*) Wire I. being apparently 1ˢ erroneous is rejected.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Oct. 22	Sun 1 Limb	10·3	24·0	37·4	51·1	4·8	47 37·52	+ 0·49	......	– 17·52	13 47 20·49
	Sun 2 Limb	22·1	35·5	49·3	2·8	16·5	49 49·24	+ 0·49	......	– 17·52	13 49 32·21
	Venus 1 Limb	15·3	29·4	43·6	57·5	11·8	21 43·52	+ 0·53	......	– 17·50	15 21 26·55
	α Coronæ Borealis	43·5	58·5	13·4	28·3	43·2	28 13·38	+ 0·29	– 17·47	– 17·50	15 27 56·17
	α Lyræ	15·8	32·5	49·6	6·6	23·8	31 49·66	+ 0·21	17·34	– 17·47	18 31 32·40
	α Aquarii	28·1	41·3	54·6	8·0	21·2	57 54·64	+ 0·43	17·58	– 17·44	21 57 37·63
	ζ Pegasi	22·6	36·2	49·8	3·3	16·6	33 49·70	+ 0·38	17·47	– 17·43	22 33 32·65
	α Pegasi	41·1	54·6	8·4	22·3	36·1	57 8·50	+ 0·35	17·48	– 17·43	22 56 51·42
	Uranus	56·5	9·8	23·2	36·5	49·8	13 23·16	+ 0·46	......	– 17·43	23 13 6·19
	* D. + 39° 8′	25·3	42·4	59·5	16·7	33·8	55 59·54	+ 0·21	......	– 17·42	0 55 42·33
	α Ursæ Minoris	49·5	......	21·5	36·0	54·0	3 21·30	– 10·01	17.22	– 17·41	1 2 53·88
	* D. + 37° 37′	41·5	58·0	15·0	31·8	48·8	8 15·02	+ 0·21	......	– 17·41	1 7 57·82
	* D. + 34 54	53·8	10·0	26·2	42·5	58·8	16 26·26	+ 0·23	......	– 17·41	1 16 9·08
	* D. + 32 4	34·0	49·6	5·3	21·0	36·6	28 5·30	+ 0·25	......	– 17·41	1 27 48·14
	* D. + 31 20	46·0	1·6	17·0	32·8	48·3	30 17·14	+ 0·26	......	– 17·41	1 29 59·99
	* D. + 31 14	43·2	58·7	14·4	30·0	45·5	33 14·36	+ 0·26	......	– 17·41	1 32 57·21
Oct. 23	α Aquarii	27·6	40·9	54·2	7·5	20·8	57 54·20	+ 0·43	17·16	– 17·23	21 57 37·40
	ζ Pegasi	22·5	36·1	49·5	3·0	16·5	33 49·52	+ 0·38	17·30	– 17·22	22 33 32·68
	α Pegasi	40·7	54·4	8·2	21·9	35·5	57 8·14	+ 0·35	17·13	– 17·22	22 56 51·27
	ι Piscium	37·5	50·9	4·2	17·6	30·8	32 4·20	+ 0·41	17·26	– 17·22	23 31 47·39
	γ Pegasi	53·6	7·4	21·2	34·8	48·5	5 21·10	+ 0·35	17·23	– 17·21	0 5 4·24
	α Ursæ Minoris S.P.	28·0	44·0	0·0	17·0	32·0	3 0·20	+ 10·89	17·16	– 17·13	13 2 53·96
Oct. 24	Mercury 1 Limb	57·6	11·4	25·7	39·8	54·0	1 25·70	+ 0·53	......	– 17·11	15 1 9·12
	Venus 1 Limb	......	33·3	47·2	1·4	15·8	31 47·36	+ 0·53	......	– 17·11	15 31 30·78
	α Serpentis	15·2	28·4	41·6	55·1	8·6	36 41·78	+ 0·40	16·98	– 17·11	15 36 25·07
	α Aquilæ	51·0	4·5	18·0	31·3	44·8	43 17·92	+ 0·39	17·10	– 17·08	19 43 1·23
	β Aquilæ	20·0	33·3	46·5	0·0	13·4	47 46·64	+ 0·40	17·11	– 17·08	19 47 29·96
	ζ Pegasi	22·4	35·8	49·5	2·9	16·4	33 49·40	+ 0·38	17·19	– 17·08	22 33 32·70
	α Pegasi	40·6	54·2	8·0	21·8	35·5	57 8·02	+ 0·35	17·02	– 17·08	22 56 51·29
	Uranus	44·6	58·1	11·4	24·7	38·1	13 11·38	+ 0·46	......	– 17·08	23 12 54·76
	* D. + 39° 8′	25·2	42·4	59·7	16·7	33·5	55 59·50	+ 0·21	......	– 17·08	0 55 42·63
	* D. + 38 56	21·9	39·0	56·2	13·1	30·2	0 56·08	+ 0·21	......	– 17·08	1 0 39·21
	α Ursæ Minoris	49·5	......	23·0	37·5	53·6	3 21·78	– 10·01	17·90	– 17·08	1 2 54·69
	* D. + 37° 38′	10·5	27·5	44·2	1·0	17·8	6 44·20	+ 0·21	......	– 17·08	1 6 27·33
	* D. + 37 37	41·3	58·1	15·0	31·6	48·4	8 14·88	+ 0·21	......	– 17·08	1 7 58·01
	* D. + 34 54	53·6	9·8	26·0	42·2	58·4	16 26·00	+ 0·23	......	– 17·08	1 16 9·15
	* D. + 32 4	33·8	49·4	5·0	20·7	36·5	28 5·08	+ 0·25	......	– 17·08	1 27 48·25
	* D. + 31 20	45·6	1·3	16·8	32·5	48·1	30 16·86	+ 0·26	......	– 17·08	1 30 0·04
	* D. + 31 14	42·8	58·5	14·2	29·7	45·3	33 14·10	+ 0·26	......	– 17·08	1 32 57·28
Oct. 26	ζ Pegasi	22·1	35·7	49·2	2·8	16·2	33 49·20	+ 0·38	17·01	– 17·04	22 33 32·54
	α Pegasi	40·7	54·4	8·1	21·6	35·5	57 8·06	+ 0·35	17·08	– 17·04	22 56 51·37
	12 Canum Venat.	16·2	33·3	50·5	7·6	24·8	48 50·48	+ 0·20	16·97	– 17·08	12 48 33·60
	α Ursæ Minoris S.P.	28·0	44·0	59·0	15·0	32·0	2 59·60	+ 10·89	16·94	– 17·08	13 2 53·41
Oct. 27	δ Ursæ Minoris	19·5	......	47·0	30·0	14·0	23 46·65	– 4·27	17·90	– 17·10	18 23 25·28
	β Lyræ	57·0	12·8	28·7	44·6	0·5	44 28·72	+ 0·24	17·10	– 17·10	18 44 11·86
	ζ Pegasi	22·4	35·8	49·4	2·9	16·5	33 49·40	+ 0·38	17·22	– 17·11	22 33 32·67
	α Pegasi	40·6	54·5	8·1	21·8	35·5	57 8·10	+ 0·35	17·13	– 17·12	22 56 51·33
	Uranus	28·8	42·0	55·4	8·8	22·2	12 55·44	+ 0·46	......	– 17·12	23 12 38·78
Oct. 28	α Ophiuchi	21·8	35·7	49·5	2·8	16·6	27 49·28	+ 0·36	17·25	– 17·20	17 27 32·44
	α Lyræ	15·5	32·4	49·5	6·5	23·5	31 49·48	+ 0·21	17·29	– 17·21	18 31 32·48
	β Lyræ	57·0	12·8	28·8	44·6	0·5	44 28·74	+ 0·24	17·14	– 17·22	18 44 11·76
	12 Canum Venat.	16·6	33·5	......	......	......	48 50·76	+ 0·20	17·22	– 17·26	12 48 33·70
	α Ursæ Minoris S.P.	27·5	43·0	59·0	14·0	31·5	2 59·00	+ 10·89	16·64	– 17·27	13 2 52·62

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Oct. 29	12 Canum Venat.	16·5	33·6	50·8	8·1	25·2	48 50·84	+ 0·20	−17·28	−17·34	12 48 33·70
	α Ursæ Minoris S.P.	27·5	43·0	0·0	17·0	32·0	2 59·90	+10·89	17·62	−17·34	13 2 53·45
	α Bootis	12·3	26·4	40·5	54·7	8·7	8 40·52	+ 0·33	17·36	−17·34	14 8 23·51
Oct. 30	Sun 1 Limb	57·0	10·8	24·8	38·1	52·2	18 24·58	+ 0·50	……	−17·34	14 18 7·74
	Sun 2 Limb	10·5	24·2	38·0	51·7	5·4	20 37·96	+ 0·50	……	−17·34	14 20 21·12
	α Coronæ Borealis	43·4	58·2	13·2	28·1	43·2	28 13·22	+ 0·29	17·34	−17·35	15 27 56·16
	Venus 1 Limb	1·5	15·5	30·0	44·4	58·4	2 29·96	+ 0·54	……	−17·35	16 2 13·15
	δ Ursæ Minoris	……	1·0	46·0	28·5	13·0	23 45·32	− 4·27	17·74	−17·36	18 23 23·69
	β Lyræ	57·2	13·1	28·8	44·8	0·7	44 28·92	+ 0·24	17·35	−17·36	18 44 11·80
	α Pegasi	41·0	54·5	8·3	22·2	36·0	57 8·40	+ 0·35	17·46	−17·34	22 56 51·41
	Uranus	14·4	27·7	41·2	54·5	7·8	12 41·12	+ 0·46	……	−17·34	23 12 24·24
	ι Piscium	37.5	51·0	4·3	17·6	31·1	32 4·30	+ 0·41	17·40	−17·34	23 31 47·37
Oct 31	δ Aquilæ	18·6	31·8	45·2	58·5	11·8	17 45·18	+ 0·42	17·25	−17·26	19 17 28·34
	γ Aquilæ	31·5	45·1	58·6	12·1	25·5	38 58·56	+ 0·38	17·34	−17·26	19 38 41·68
	α Aquilæ	51·2	4·5	17·8	31·5	44·9	43 17·98	+ 0·39	17·27	−17·26	19 43 1·11
	β Aquilæ	19·8	33·2	46·5	0·0	13·4	47 46·58	+ 0·40	17·16	−17·26	19 47 29·72
Nov. 2	α Pegasi	40·8	54·4	8·2	21·9	35·6	57 8·18	+ 0·35	17·27	−17·26	22 56 51·27
	β Ceti	26·3	40·2	54·5	8·4	22·5	35 54·38	+ 0·53	17·27	−17·26	0 35 37·65
	⁎ D. +39° 8′	25·2	42·4	59·4	16·5	33·6	55 59·42	+ 0·21	……	−17·26	0 55 42·37
	⁎ D. +38 56	22·0	39·0	56·2	13·2	30·3	0 56·14	+ 0·21	……	−17·26	1 0 39·09
	α Ursæ Minoris	48·0	……	22·5	35·0	51·0	3 20·08	−10·01	17·69	−17·26	1 2 52·81
	⁎ D. +37° 37′	41·4	58·2	14·9	31·6	48·3	8 14·88	+ 0·21	……	−17·26	1 7 57·83
	θ′ Ceti	56·0	9·2	22·6	36·2	49·8	16 22·76	+ 0·47	17·30	−17·26	1 16 5·97
	⁎ D. +32° 4′	33·7	49·4	5·2	21·0	36·6	28 5·18	+ 0·25	……	−17·26	1 27 48·17
	⁎ D. +31 20	46·0	1·4	17·1	32·6	48·1	30 17·04	+ 0·26	……	−17·26	1 30 0·04
	⁎ D. +31 14	43·2	58·8	14·5	30·0	45·7	33 14·44	+ 0·26	……	−17·26	1 32 57·44
	α Arietis	2·7	17·2	31·4	45·8	0·3	58 31·48	+ 0·31	17·19	−17·26	1 58 14·53
Nov. 3	Sun 1 Limb	38·7	52·5	6·5	20·0	34·0	34 6·34	+ 0·51	……	−17·20	14 33 49·65
	Sun 2 Limb	52·7	6·8	20·4	34·2	48·2	36 20·46	+ 0·51	……	−17·20	14 36 3·77
	α Herculis	12·3	26·0	39·7	53·5	7·1	7 39·72	+ 0·35	17·19	−17·19	17 7 22·88
	δ Ursæ Minoris	15·5	58·0	43·0	26·5	10·0	23 42·60	− 4·27	16·54	−17·19	18 23 21·14
	β Lyræ	56·7	12·6	28·6	44·5	0·4	44 28·56	+ 0·24	17·07	−17·19	18 44 11·61
	β Aquarii	1·4	14·7	28·0	41·4	54·8	23 28·06	+ 0·46	17·22	−17·19	21 23 11·33
	γ Capricorni	5·5	19·4	33·4	47·1	1·4	31 33·36	+ 0·52	……	−17·19	21 31 16·69
	ε Pegasi	12·4	26·2	39·7	53·1	6·6	36 39·60	+ 0·39	17·21	−17·19	21 36 22·80
	δ Capricorni	4·7	18·7	32·8	46·7	0·4	38 32·66	+ 0·52	……	−17·19	21 38 15·99
	α Aquarii	27·6	40·8	54·1	7·5	20·7	57 54·14	+ 0·43	17·23	−17·20	21 57 37·37
Nov. 4	θ Aquarii	17·3	30·4	44·1	57·5	10·8	8 44·02	+ 0·47	……	−17·42	22 8 27·07
	ζ Pegasi	22·6	36·1	49·6	3·1	16·6	33 49·60	+ 0·38	17·51	−17·42	22 33 32·56
	Moon 1 Limb	4·7	18·4	32·3	46·2	59·8	38 32·28	+ 0·48	……	−17·42	22 38 15·34
	α Pegasi	41·1	54·8	8·3	22·1	35·7	57 8·40	+ 0·35	17·51	−17·43	22 56 51·32
	γ Piscium	46·8	0·2	13·4	26·6	39·8	9 13·36	+ 0·42	……	−17·43	23 8 56·35
	ι Piscium	37·6	50·8	4·1	17·6	31·1	32 4·24	+ 0·41	17·38	−17·43	23 31 47·22
	α Andromedæ	58·7	13·5	28·6	43·8	58·8	0 28·68	+ 0·28	17·31	−17·44	0 0 11·52
	γ Pegasi	53·8	7·4	21·3	35·0	48·7	5 21·24	+ 0·35	17·42	−17·44	0 5 4·15
	α Ursæ Minoris	48·0	3·0	19·5	36·0	53·0	3 19·90	−10·01	16·98	−17·45	1 2 52·44
	⁎ D. +37° 38′	10·8	27·6	44·4	1·5	18·3	6 44·52	+ 0·21	……	−17·45	1 6 27·28
	⁎ D. +37 25	20·2	36·8	53·4	10·2	27·2	8 53·56	+ 0·22	……	−17·45	1 8 36·33
	⁎ D. +34 54	54·0	10·2	26·6	42·6	58·7	16 26·42	+ 0·23	……	−17·45	1 16 9·20
Nov. 5	α Cygni	40·7	59·4	18·2	36·5	55·4	36 18·04	+ 0·17	17·96	−17·70	20 36 0·51
	α Pegasi	41·1	54·6	8·4	22·3	36·0	57 8·48	+ 0·35	17·60	−17·73	22 56 51·10
	γ Piscium	46·8	0·2	13·5	26·7	40·0	9 13·44	+ 0·42	……	−17·73	23 8 56·13

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Nov. 5	Uranus	49·8	3·1	16·6	29·9	43·2	12 16·52	+ 0·46	......	– 17·73	23 11 59·25
	Moon 1 Limb	20·8	34·2	48·1	1·5	15·2	26 47·96	+ 0·45	......	– 17·73	23 26 30·68
	ι Piscium	38·0	51·2	4·6	17·7	31·1	32 4·52	+ 0·41	– 17·66	– 17·73	23 31 47·20
	20 Piscium	37·6	50·8	4·2	17·5	31·0	40 4·22	+ 0·44	......	– 17·73	23 39 46·93
	ω Piscium	0·4	13·6	27·1	40·4	54·0	51 27·10	+ 0·40	......	– 17·73	23 51 9·77
	α Andromedæ	59·0	14·0	29·1	44·2	59·2	0 29·10	+ 0·28	17·73	– 17·73	0 0 11·65
	γ Pegasi	54·2	7·8	21·4	35·3	49·0	5 21·54	+ 0·35	17·72	– 17·73	0 5 4·16
	α Ursæ Minoris	49·0	0·0	......	......	......	3 18·70	– 10·01	17·03	– 17·74	1 2 50·95
	α Ursæ Minoris S.P.	......	......	57·5	18·0	......	2 59·75	+ 10·89	19·12	– 17·79	1 2 52·85
Nov. 6	α Pegasi	41·1	54·6	8·4	22·2	36·0	57 8·46	+ 0·35	17·59	– 17·84	22 56 50·97
	Uranus	46·3	59·6	13·0	26·4	39·7	12 13·00	+ 0·46	......	– 17·84	23 11 55·62
	ι Piscium	38·1	51·4	4·6	18·0	31·5	32 4·72	+ 0·41	17·87	– 17·84	23 31 47·29
	20 Piscium	37·6	51·1	4·5	17·8	31·2	40 4·44	+ 0·44	......	– 17·84	23 39 47·04
	γ Pegasi	54·5	8·2	22·0	35·5	49·2	5 21·88	+ 0·35	18·07	– 17·84	0 5 4·39
	Moon 1 Limb	12·3	26·0	39·8	53·4	7·0	16 39·70	+ 0·42	......	– 17·84	0 16 22·28
Nov. 7	Sun 2 Limb	......	3·2	16·8	30·3	44·7	52 16·81	+ 0·52	......	– 17·93	14 51 59·40
	Venus 1 Limb	1·7	16·0	30·6	45·1	59·7	44 30·62	+ 0·54	......	– 17·94	16 44 13·22
	α Herculis	13·0	26·6	40·4	54·2	7·8	7 40·40	+ 0·35	17·89	– 17·94	17 7 22·81
	α Ophiuchi	22·6	36·0	49·7	3·4	17·1	27 49·76	+ 0·36	17·82	– 17·94	17 27 32·18
	δ Ursæ Minoris	15·0	58·0	42·5	26·0	9·5	23 42·20	– 4·27	17·52	– 17·95	18 23 19·98
	β Lyræ	57·5	13·4	29·3	45·2	1·0	44 29·28	+ 0·24	17·86	– 17·95	18 44 11·57
	Uranus	43·4	56·7	10·0	23·4	36·8	12 10·06	+ 0·46	......	– 18·00	23 11 52·52
	ι Piscium	38·3	51·6	4·8	18·3	31·5	32 4·90	+ 0·41	18·06	– 18·00	23 31 47·31
	α Andromedæ	59·2	14·1	29·3	44·6	59·6	0 29·36	+ 0·28	18·01	– 18·01	0 0 11·63
	γ Pegasi	54·5	8·2	22·0	35·6	49·3	5 21·92	+ 0·35	18·12	– 18·01	0 5 4·26
	δ Piscium	18·5	31·6	45·1	58·5	11·8	40 45·10	+ 0·40	......	– 18·02	0 40 27·48
	ε Piscium	33·7	47·1	0·5	13·8	27·3	55 0·48	+ 0·40	......	– 18·02	0 54 42·86
	⁎ D. + 38° 56′	22·9	39·9	57·1	14·1	31·2	0 57·04	+ 0·21	......	– 18·03	1 0 39·22
	α Ursæ Minoris	46·5	......	18·0	38·0	54·0	3 20·02	– 10·01	18·97	– 18·03	1 2 51·98
	Moon 1 Limb	2·0	15·8	30·0	43·8	57·8	9 29·88	+ 0·38	......	– 18·03	1 9 12·23
	⁎ D. + 35° 8′	9·5	25·6	41·8	58·0	14·2	16 41·82	+ 0·23	......	– 18·03	1 16 24·02
	η Piscium	50·4	4·2	18·1	31·6	45·7	23 18·00	+ 0·35	......	– 18·03	1 23 0·32
	β Arietis	42·6	57·1	11·3	25·0	39·5	46 11·10	+ 0·33	......	– 18·04	1 45 53·39
Nov. 10	ζ Cygni	58·4	13·6	29·0	44·3	59·6	6 28·98	+ 0·27	19·17	– 19·14	21 6 10·11
	α Pegasi	42·5	56·2	10·1	23·8	37·4	57 10·00	+ 0·35	19·17	– 19·17	22 56 51·18
	Uranus	35·4	48·5	2·0	15·3	28·6	12 1·96	+ 0·46	......	– 19·18	23 11 43·24
	ι Piscium	39·5	52·7	6·0	19·4	32·6	32 6·04	+ 0·41	19·23	– 19·19	23 31 47·26
	α Andromedæ	0·5	15·5	30·6	45·6	0·7	0 30·58	+ 0·28	19·26	– 19·19	0 0 11·67
	⁎ D. + 38° 24′	50·7	7·6	24·8	41·8	58·7	59 24·72	+ 0·21	......	– 19·21	0 59 5·72
	α Ursæ Minoris	47·0	3·0	19·5	36·0	54·0	3 19·90	– 10·01	19·75	– 19·21	1 2 50·68
	⁎ D. + 38° 13′	57·6	14·8	31·8	48·6	5·8	4 31·72	+ 0·21	......	– 19·21	1 4 12·72
	⁎ D. + 37 38	12·6	29·4	46·2	2·8	19·7	6 46·14	+ 0·21	......	– 19·21	1 6 27·14
	⁎ D. + 37 25	21·6	38·1	55·1	11·8	28·5	8 55·02	+ 0·22	......	– 19·21	1 8 36·03
	⁎ D. + 35 8	10·3	26·6	42·8	59·1	15·3	16 42·82	+ 0·23	......	– 19·21	1 16 23·84
	η Tauri	53·8	8·4	22·8	37·4	51·8	38 22·84	+ 0·31	19·12	– 19·24	3 38 3·91
	37 Tauri	9·8	24·1	38·3	52·8	7·0	55 38·40	+ 0·32	......	– 19·24	3 55 19·48
	Moon 2 Limb	18·1	33·5	49·0	4·1	19·2	18 48·78	+ 0·31	......	– 19·25	4 18 29·84
Nov. 11	Sun 1 Limb	43·1	56·8	11·0	25·0	39·0	6 10·98	+ 0·52	......	– 19·41	15 5 52·09
	Sun 2 Limb	......	13·4	27·3	41·2	55·2	8 27·29	+ 0·52	......	– 19·41	15 8 8·40
	Venus 1 Limb	26·0	40·4	55·0	9·8	24·3	5 55·10	+ 0·55	......	– 19·44	17 5 36·21
	α Ophiuchi	24·1	37·6	51·3	5·0	18·6	27 51·32	+ 0·36	19·39	– 19·44	17 27 32·24
	δ Ursæ Minoris	15·5	59·0	42·0	26·0	10·5	23 42·60	– 4·27	19·43	– 19·46	18 23 18·87
	ι Piscium	39·9	53·3	6·6	19·8	33·1	32 6·54	+ 0·41	19·69	– 19·54	23 31 47·41
	α Andromedæ	0·7	15·5	30·8	45·9	1·1	0 30·80	+ 0·28	19·48	– 19·56	0 0 11·52

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.		Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.		
		I.	II.	III.	IV.	V.				observed.	interpolated.			
		s.	s.	s.	s.	s.	m.	s.	s.	s.	s.	h.	m.	s.
Nov. 11	γ Pegasi	56·0	9·6	23·2	37·0	50·6	5	23·28	+ 0·35	− 19·50	− 19·56	0	5	4·07
	β Ceti	28·3	42·5	56·6	10·8	24·9	35	56·62	+ 0·53	19·55	− 19·57	0	35	37·58
	α Ursæ Minoris	47·5	2·5	19·0	37·5	......	3	19·75	− 10·01	19·92	− 19·59	1	2	50·15
	α Ursæ Minoris S.P.	......	......	1·0	......	......	3	1·30	+ 10·89	22·49	− 19·93	13	2	52·26
Nov. 12	(*a*) Mercury 1 Limb	43·4	57·8	12·2	26·5	42·3	44	12·44	+ 0·55	......	− 20·03	16	43	52·96
	α Herculis	15·0	28·7	42·4	56·3	10·0	7	42·48	+ 0·35	19·99	− 20·04	17	7	22·79
	α Ophiuchi	24·6	38·2	52·0	......	19·1	27	51·88	+ 0·36	19·96	− 20·04	17	27	32·20
	δ Ursæ Minoris	15·5	58·5	42·5	26·0	10·5	23	42·60	− 4·27	19·77	− 20·07	18	23	18·26
	β Lyræ	59·6	15·5	31·5	47·4	3·2	44	31·44	+ 0·24	20·09	− 20·09	18	44	11·59
	α Andromedæ	......	16·6	31·8	46·8	1·6	0	31·66	+ 0·28	20·35	− 20·23	0	0	11·71
Nov. 14	ι Piscium	......	54·4	7·5	20·8	34·3	32	7·58	+ 0·41	20·80	− 20·86	23	31	47·13†
	α Andromedæ	2·1	17·1	32·3	47·4	2·4	0	32·26	+ 0·28	20·97	− 20·88	0	0	11·66†
	γ Pegasi	......	......	24·6	38·3	52·0	5	24·59	+ 0·35	20·83	− 20·88	0	5	4·06†
	β Ceti	30·0	43·8	58·0	12·0	......	35	57·96	+ 0·53	20·91	− 20·89	0	35	37·60†
	α Ursæ Minoris	......	5·0	22·0	......	54·0	3	21·53	− 10·01	22·70	− 20·91	1	2	50·61†
	γ Ceti	59·5	12·6	26·0	39·3	52·5	35	25·98	+ 0·42	20·96	− 20·95	2	35	5·45†
Nov. 15	α Cygni	......	3·4	22·0	40·6	59·5	36	22.03	+ 0·17	22·22	− 22·22	20	35	59·98†
	Moon 2 Limb	10·6	24·3	38·0	51·7	5·5	32	38·02	+ 0·41	......	− 22·51	10	32	15·92†
	χ Leonis	44·0	57·3	10·6	24·1	37·5	57	10·70	+ 0·39	......	− 22·52	10	56	48·57†
	69 Leonis	......	......	59·1	12·4	25·5	5	59·05	+ 0·43	......	− 22·52	11	5	36·96†
	δ Hydræ & Crateris	18·1	31·5	45·4	59·0	12·6	11	45·32	+ 0·50	22·55	− 22·53	11	11	23·29†
	Mars 2 Limb	18·0	31·3	44·6	58·0	11·4	33	44·66	+ 0·41	......	− 22·54	11	33	22·53†
	β Leonis	51·0	4·6	18·5	32·2	46·1	41	18·48	+ 0·35	22·49	− 22·54	11	40	56·29†
Nov. 17	α Lyræ	20·5	37·5	54·6	11·6	28·5	31	54·54	+ 0·21	22·70	− 22·69	18	31	32·06†
	α Ursæ Minoris	......	......	22·0	37·0	55·0	3	21·47	− 10·01	23·83	− 22·85	1	2	48·61†
	δ Hydræ & Crateris	18·5	32·3	......	......	......	11	45·92	+ 0·50	23·12	− 23·10	11	11	23·32†
	Moon 2 Limb	45·4	58·8	12·5	26·1	39·6	21	12·48	+ 0·44	......	− 23·11	11	20	49·81†
	υ Leonis	44·2	57·4	10·6	24·0	37·4	29	10·72	+ 0·43	......	− 23·11	11	28	48·04†
	β Leonis	51·5	5·2	19·2	32·7	46·6	41	19·04	+ 0·35	23·02	− 23·11	11	40	56·28†
	β Virginis	......	33·6	47·0	0·4	13·5	42	46·98	+ 0·42	......	− 23·11	11	42	24·29†
	α Coronæ Borealis	49·3	4·3	19·3	34·1	49·1	28	19·22	+ 0·29	23·28	− 23·21	15	27	56·30†
Nov. 18	Sun 1 Limb	33·7	48·0	2·2	16·4	30·5	35	2·16	+ 0·79	......	− 23·83	15	34	39·12
	Sun 2 Limb	51·8	6·0	20·1	34·2	48·3	37	20·08	+ 0·79	......	− 23·83	15	36	57·04
	δ Ursæ Minoris	19·0	......	45·0	......	12·5	23	45·43	− 5·38	23·46	− 23·90	18	23	16·15
	β Lyræ	3·4	19·2	35·1	51·0	6·8	44	35·10	+ 0·42	24·01	− 23·91	18	44	11·61
	α Andromedæ	5·0	19·9	35·1	50·0	5·2	0	35·04	+ 0·46	23·97	− 24·05	0	0	11·45
	γ Pegasi	0·1	13·6	27·6	41·3	55·0	5	27·52	+ 0·57	24·01	− 24·05	0	5	4·04
	α Ursæ Minoris	49·5	7·5	23·5	40·5	59·0	3	24·00	− 12·76	23·98	− 24·08	1	2	47·16
	υ Leonis	45·4	58·8	11·9	25·1	38·5	29	11·94	+ 0·66	......	− 24·35	11	28	48·25
	β Virginis	21·5	34·7	48·1	1·4	14·7	42	48·08	+ 0·64	......	− 24·36	11	42	24·36
	Moon 2 Limb	55·4	8·8	22·8	36·2	50·1	8	22·66	+ 0·71	......	− 24·37	12	7	59·00
	γ′ Virginis	32·8	46·1	59·5	12·8	26·1	33	59·46	+ 0·66	......	− 24·38	12	33	35·74
	12 Canum Venat.	24·0	41·2	58·3	15·6	32·6	48	58·34	+ 0·38	24·50	− 24·39	12	48	34·33
	α Ursæ Minoris S.P.	24·0	40·5	......	15·0	33·0	2	58·05	+ 14·10	25·05	− 24·39	13	2	47·76
	α Bootis	19·5	33·4	47·6	1·8	16·0	8	47·66	+ 0·53	24·44	− 24·42	14	8	23·77
	α Coronæ Borealis	50·4	5·1	20·1	35·1	50·1	28	20·16	+ 0·47	24·39	− 24·46	15	27	56·17
Nov. 19	Sun 1 Limb	44·4	58·7	12·9	27·1	41·0	39	12·82	+ 0·79	......	− 24·46	15	38	49·15
	Sun 2 Limb	2·6	16·8	31·0	45·1	59·2	41	30·94	+ 0·79	......	− 24·46	15	41	7·27
	Mercury 1 Limb	......	......	......	22·0	36·7	7	7·32	+ 0·82	......	− 24·50	17	6	43·64
	α Ophiuchi	28·9	42·5	56·1	9·8	23·4	27	56·14	+ 0·58	24·46	− 24·51	17	27	32·21
	Venus 1 Limb	47·0	1·7	16·5	31·2	45·9	49	16·46	+ 0·82	......	− 24·52	17	48	52·76
	δ Ursæ Minoris	19·0	2·0	46·5	30·0	13·5	23	46·20	− 5·38	24·54	− 24·54	18	23	16·28

(*a*) Intervals irregular, Observation doubtful.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Nov. 19	β Lyræ	3·8	19·7	35·7	51·5	7·5	44 35·64	+ 0·42	− 24·56	− 24·55	18 44 11·51
	α Andromedæ	5·5	20·6	35·7	50·9	6·0	0 35·74	+ 0·46	24·68	− 24·66	0 0 11·54
	γ Pegasi	0·7	14·4	28·2	42·0	55·7	5 28·20	+ 0·57	24·70	− 24·66	0 5 4·11
	β Ceti	33·4	47·3	1·4	15·6	29·6	36 1·46	+ 0·78	24·69	− 24·67	0 35 37·57
	∗ D. + 38° 24′	55·7	12·6	29·8	46·7	3·6	59 29·68	+ 0·38	......	− 24·68	0 59 5·38
	α Ursæ Minoris	52·0	7·0	23·5	40·0	57·5	3 24·00	− 12·76	24·41	− 24·68	1 2 46·56
	∗ D + 35° 8′	15·8	31·6	48·0	4·1	20·5	16 48·00	+ 0·41	......	− 24·69	1 16 23·72
	γ′ Virginis	33·4	46·5	59·7	13·1	26·5	33 59·84	+ 0·66	......	− 24·93	12 33 35·57
	12 Canum Venat.	24·5	41·6	58·7	15·8	33·0	48 58·72	+ 0·38	24·85	− 24·94	12 48 34·16
	α Ursæ Minoris S.P.	24·5	......	58·0	14·5	32·0	2 58·12	+ 14·10	25·61	− 24·94	13 2 47·28
Nov. 20	Sun 1 Limb	56·0	10·3	24·3	38·5	52·8	43 24·38	+ 0·79	......	− 25·00	15 43 0·17
	Sun 2 Limb	14·2	28·4	42·6	56·8	11·1	45 42·62	+ 0·79	......	− 25·00	15 45 18·41
	α Ophiuchi	29·4	43·0	56·7	10·2	23·8	27 56·62	+ 0·58	24·94	− 25·04	17 27 32·16
	Venus 1 Limb	14·0	28·6	43·4	58·1	12·8	54 43·38	+ 0·82	......	− 25·05	17 54 19·15
	ε Pegasi	20·2	33·7	47·1	0·5	14·1	36 47·12	+ 0·61	25·17	− 25·13	21 36 22·60
	Uranus	21·8	35·1	48·6	2·1	15·3	11 48·58	+ 0·70	......	− 25·17	23 11 24·11
	α Andromedæ	6·3	21·3	36·4	51·4	6·5	0 36·38	+ 0·46	25·33	− 25·18	0 0 11·66
	α Ursæ Minoris	54·0	......	......	......	......	3 27·20	− 12·76	28·14	− 25·21	1 2 49·23
Nov. 23	Sun 1 Limb	......	50·0	......	18·1	......	56 4·05	+ 0·64	......	− 26·63	15 55 38·06
	Sun 2 Limb	54·9	.....	23·2	37·4	......	58 23·23	+ 0·64	......	− 26·63	15 57 57·24
	∗ D. + 38° 24′	57·7	14·6	31·7	48·7	5·5	59 31·64	+ 0·35	......	− 26·83	0 59 5·16
	α Ursæ Minoris	50·0	7·0	24·0	41·0	57·5	3 23·90	− 9·14	29·71	− 26·83	1 2 47·93
	∗ D. + 38° 13′	5·6	22·2	39·1	56·3	13·1	4 39·26	+ 0·35	......	− 26·83	1 4 12·78
	∗ D. + 37 25	29·4	46·0	2·7	19·4	35·9	9 2·68	+ 0·36	......	− 26·84	1 8 36·20
	θ Ceti	5·0	18·5	32·1	45·6	59·0	16 32·04	+ 0·59	26·75	− 26·84	1 16 5·79
	α Aurigæ	47·7	6·8	26·0	45·0	4·0	5 25·90	+ 0·29	26·90	− 26·93	5 4 59·26
	β Orionis	55·0	8·4	21·8	35·2	48·7	7 21·82	+ 0·59	26·92	− 26·93	5 6 55·48
	β Tauri	12·7	27·8	43·0	58·1	13·2	16 42·96	+ 0·41	26·97	− 26·93	5 16 16·44
	δ Orionis	54·6	7·7	21·0	34·4	47·6	24 21·06	+ 0·55	26·99	− 26·93	5 23 54·68
Nov. 24	Sun 1 Limb	50·2	4·7	19·1	33·3	47·5	0 18·96	+ 0·64	......	− 27·20	15 59 52·40
	Sun 2 Limb	9·6	23·7	38·0	52·2	6·5	2 38·00	+ 0·64	......	− 27·20	16 2 11·44
	α Ophiuchi	31·7	45·4	59·1	12·7	26·2	27 59·02	+ 0·49	27·25	− 27·23	17 27 32·28
	Venus 1 Limb	......	......	31·9	47·0	1·6	16 32·12	+ 0·66	......	− 27·25	18 16 5·53
	δ Ursæ Minoris	......	1·5	46·0	30·0	13·5	23 46·02	− 3·81	27·41	− 27·26	18 23 14·95
	β Lyræ	6·6	22·5	38·3	54·3	10·1	44 38·36	+ 0·38	27·30	− 27·27	18 44 11·47
	γ Aquilæ	41·1	54·5	8·1	21·6	35·1	39 8·08	+ 0·50	27·26	− 27·29	19 38 41·29
	α Aquilæ	0·6	14·0	27·5	41·0	54·5	43 27·52	+ 0·51	27·21	− 27·29	19 43 0·74
	β Ceti	36·3	50·4	4·4	18·3	32·4	36 4·36	+ 0·64	27·49	− 27·42	0 35 37·58
	α Ursæ Minoris	50·0	5·0	23·0	38·5	57·0	3 22·70	− 9·14	28·99	− 27·42	1 2 46·14
Nov. 25	α Arietis	13·5	27·8	42·5	56·8	11·1	58 42·34	+ 0·44	28·12	− 28·11	1 58 14·67
	γ Ceti	6·5	19·7	33·0	46·5	59·6	35 33·06	+ 0·54	28·11	− 28·12	2 35 5·48
	α Ceti	0·8	14·1	27·4	40·8	54·1	54 27·44	+ 0·54	28·06	− 28·13	2 53 59·85
	η Tauri	3·0	17·4	32·0	46·5	1·1	38 32·00	+ 0·44	28·22	− 28·15	3 38 4·29
Nov. 26	Sun 1 Limb	21·2	36·2	50·6	4·8	19·2	8 50·40	+ 0·64	......	− 28·51	16 8 22·53
	Sun 2 Limb	41·8	56·1	10·4	24·7	38·8	11 10.36	+ 0·64	......	− 28·51	16 10 42·49
	δ Ursæ Minoris	18·5	2·0	45·0	29·5	13·5	23 45·70	− 3·81	27·65	− 28·57	18 23 13·32
	ζ Pegasi	33·5	46·9	0·5	13·8	27·4	34 0·42	+ 0·50	28·71	− 28·69	22 33 32·23
	Uranus	22·8	36·4	49·7	3·1	16·5	11 49·70	+ 0·58	......	− 28.71	23 11 21·57
	β Ceti	37·6	51·6	5·7	19·6	33·7	36 5·64	+ 0·64	28·79	− 28·75	0 35 37·53
	α Ursæ Minoris	48·0	4·0	22·0	......	55·5	3 21·55	− 9·14	28·83	− 28·76	1 2 43·65
	∗ D. + 38° 13′	7·0	24·2	41·2	58·0	15·1	4 41·10	+ 0·35	......	− 28·76	1 4 12·69
	∗ D· + 35 8	19·8	35·8	52·1	8·5	24·8	16 52·20	+ 0·37	......	− 28·77	1 16 23·80
	α Arietis	14·1	28·4	42·8	57·3	11·8	58 42·88	+ 0·44	28·66	− 28·79	1 58 14·53

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Nov. 26	γ Ceti	7·2	20·5	33·9	47·1	0·4	35 33·82	+ 0·54	−28·87	−28·81	2 35 5·55
	α Ceti	1·7	14·8	28·2	41·5	54·8	54 28·20	+ 0·54	28·81	−28·82	2 53 59·92
	α Ursæ Minoris S.P.	……	47·0	3·5	20·0	……	3 3·50	+10·26	30·43	−29·14	13 2 44·62
Nov. 27	Sun 1 Limb	39·4	53·6	8·0	22·3	36·7	13 8·00	+ 0·64	……	−29·24	16 12 39·40
	Sun 2 Limb	59·1	13·2	27·7	42·1	56·2	15 27·66	+ 0·64	……	−29·24	16 14 59·06
	δ Ursæ Minoris	21·0	……	47·0	31·0	……	23 47·40	− 3·81	29·62	−29·31	18 23 14·28
	β Lyræ	8·5	24·4	40·3	56·2	12·1	44 40·30	+ 0·38	29·27	−29·32	18 44 11·36
	α Pegasi	52·7	6·4	20·0	33·7	47·4	57 20·04	+ 0·48	29·54	−29·45	22 56 51·07
	Uranus	23·8	37·2	50·6	4·0	17·4	11 50·60	+ 0·58	……	−29·46	23 11 21·72
	β Ceti	38·4	52·4	6·6	20·7	34·8	36 6·58	+ 0·64	29·74	−29·50	0 35 37·72
	α Ursæ Minoris	……	3·5	21·0	39·0	56·5	3 21·62	− 9·14	29·40	−29·51	1 2 42·97
	θ^1 Ceti	7·8	21·3	34·5	48·0	1·4	16 34·60	+ 0·59	29·33	−29·52	1 16 5·67
	✱ D. + 30° 21′	11·7	27·2	42·6	58·2	13·6	33 42·66	+ 0·40	……	−29·53	1 33 13·53
	✱ D. + 28 23	2·5	17·6	32·7	48·0	3·0	37 32·76	+ 0·41	……	−29·53	1 37 3·64
	α Arietis	15·0	29·3	43·7	58·0	12·5	58 43·70	+ 0·44	29·48	−29·54	1 58 14·60
	α Ursæ Minoris S.P.	……	……	3·0	20·5	40·0	3 4·43	+10·26	31·86	−29·87	13 2 44·82
Nov. 28	Sun 1 Limb	57·1	11·5	25·8	40·1	54·2	17 25·74	+ 0·65	……	−29·97	16 16 56·42
	Sun 2 Limb	17·2	31·5	45·8	0·0	14·5	19 45·80	+ 0·65	……	−29·97	16 19 16·48
	α Herculis	25·0	38·7	52·3	6·0	19·8	7 52·36	+ 0·48	29·99	−29·99	17 7 22·85
		INSTRUMENT REVERSED.									
	δ Ursæ Minoris	20·0	4·5	47·0	32·5	14·5	23 47·70	− 4·69	29·30	−30·07	18 23 12·94
	Venus 1 Limb	49·6	4·0	18·8	33·6	48·0	38 18·80	+ 0·80	……	−30·08	18 37 49·52
	β Lyræ	9·4	25·1	41·0	57·0	12·8	44 41·06	+ 0·46	30·11	−30·08	18 44 11·44
	ζ Aquilæ	7·3	21·0	34·6	48·5	2·2	58 34·72	+ 0·59	30·07	−30·09	18 58 5·22
	γ Aquilæ	43·8	57·3	10·8	24·4	37·8	39 10·82	+ 0·61	30·14	−30·11	19 38 41·32
	α Aquilæ	3·4	16·8	30·2	43·7	57·1	43 30·24	+ 0·62	30·07	−30·11	19 43 0·75
	Moon 1 Limb	41·7	56·6	11·6	26·4	41·2	53 11·50	+ 0·79	……	−30·12	19 52 42·17
	β^2 Capricorni	5·8	19·5	33·3	47·0	0·8	12 33·28	+ 0·74	……	−30·13	20 12 3·89
	ν Capricorni	1·3	15·3	28·9	42·7	56·5	31 28·94	+ 0·76	……	−30·14	20 30 59·56
	α Ursæ Minoris	……	……	22·0	41·0	58·0	3 23·39	−11·28	29·54	−30·28	1 2 41·83†
Nov. 30	Sun 1 Limb	35·1	49·2	3·5	……	……	26 3·60	+ 0·47	……	−31·21	16 25 32·86
	Sun 2 Limb	……	……	……	……	52·8	28 24·13	+ 0·47	……	−31·21	16 27 53·39
	α Herculis	26·5	40·2	53·8	7·7	21·4	7 53·92	+ 0·32	31·38	−31·23	17 7 23·01
	α Ophiuchi	36·1	49·6	3·3	16·9	30·5	28 3·28	+ 0·33	31·33	−31·24	17 27 32·37
	δ Ursæ Minoris	……	5·0	48·0	32·5	15·0	23 48·37	− 3·33	31·85	−31·26	18 23 13·78
	Venus 1 Limb	……	……	11·1	25·4	40·0	49 10·82	+ 0·48	……	−31·27	18 48 40·03
	γ Aquilæ	45·4	58·8	12·3	25·8	39·2	39 12·30	+ 0·34	31·36	−31·29	19 38 41·35
	θ Capricorni	2·9	16·8	30·8	44·8	58·8	57 30·82	+ 0·45	……	−31·33	20 56 59·94
	ζ Cygni	10·2	25·4	40·6	56·0	11·2	6 40·68	+ 0·25	31·17	−31·33	21 6 9·60
	ι Capricorni	26·0	39·9	53·8	7·6	21·5	13 53·76	+ 0·45	……	−31·33	21 13 22·88
	Moon 1 Limb	11·1	25·0	39·2	53·3	……	31 39·20	+ 0·44	……	−31·34	21 31 8·30
	μ Capricorni	40·7	54·2	8·1	21·8	35·5	45 8·06	+ 0·44	……	−31·35	21 44 37·15
	30 Aquarii	58·5	12·0	25·4	38·8	52·2	55 25·38	+ 0·41	……	−31·35	21 54 54·44
	α Aquarii	41·2	54·5	7·8	21·1	34·5	58 7·82	+ 0·38	31·19	−31·35	21 57 36·85
	Uranus	27·6	41·1	54·5	8·0	21·5	11 54·54	+ 0·40	……	−31·38	23 11 23·56
	α Ursæ Minoris	47·0	4·0	20·5	39·0	54·0	3 20·90	− 8·57	30·83	−31·43	1 2 40·90
	✱ D. + 30° 21′	14·1	29·5	44·8	0·1	15·6	33 44·82	+ 0·25	……	−31·44	1 33 13·63
Dec. 1	Sun 1 Limb	……	9·5	23·8	38·1	52·6	30 23·82	+ 0·53	……	−32·16	16 29 52·19
	Sun 2 Limb	15·6	29·8	44·2	58·7	13·0	32 44·26	+ 0·53	……	−32·16	16 32 12·63
	α Herculis	27·4	40·9	54·8	8·5	22·2	7 54·76	+ 0·44	32·33	−32·18	17 7 23·02
	α Ophiuchi	36·7	50·4	4·1	17·7	31·3	28 4·04	+ 0·45	32·21	−32·20	17 27 32·29
	δ Ursæ Minoris	22·0	5·0	49·5	32·0	15·5	23 48·80	− 1·72	34·14	−32·24	18 23 14·84

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Dec. 1	μ Capricorni	41·8	55·6	9·2	23·0	36·7	45 9·26	+ 0·51	......	−32·38	21 44 37·39
	30 Aquarii	59·6	13·1	26·4	39·8	53·1	55 26·40	+ 0·50	......	−32·38	21 54 54·52
	α Aquarii	42·2	55·5	8·8	22·1	35·4	58 8·80	+ 0·48	−32·28	−32·39	21 57 36·89
	Moon 1 Limb	8·2	22·1	36·1	50·0	3·8	18 36·04	+ 0·50	......	−32·40	22 18 4·14
	(a) Moon 2 Limb	15·4	29·2	43·0	56·6	10·5	20 42·94	+ 0·50	......	−32·40	22 20 11·04
	κ Aquarii	36·7	50·0	3·2	16·5	30·0	30 3·28	+ 0·49	......	−32·41	22 29 31·36
	ζ Pegasi	37·1	50·4	4·0	17·6	31·1	34 4·04	+ 0·46	32·35	−32·41	22 33 32·09
	λ Aquarii	24·2	37·7	51·2	4·6	18·1	44 51·16	+ 0·50	......	−32·42	22 44 19·24
	α Pegasi	55·4	9·2	22·9	36·6	50·4	57 22·90	+ 0·45	32·42	−32·42	22 56 50·93
	Uranus	29·9	43·2	56·6	10·0	23·3	11 56·60	+ 0·49	......	−32·43	23 11 24·66
	α Ursæ Minoris	47·0	4·0	19·5	37·0	53·0	3 20·10	− 5·11	34·04	−32·51	1 2 42·48
	⁎ D. +30° 21′	15·0	30·3	45·8	1·2	16·8	33 45·82	+ 0·40	......	−32·53	1 33 13·69
	⁎ D. +28 23	5·6	20·8	35·8	51·0	6·1	37 35·86	+ 0·41	......	−32·53	1 37 3·74
Dec. 2	Sun 1 Limb	15·8	30·1	44·7	59·0	13·5	34 44·62	+ 0·63	......	−33·16	16 34 12·09
	Sun 2 Limb	36·6	50·9	5·4	19·8	34·1	37 5·36	+ 0·63	......	−33·16	16 36 32·83
	δ Ursæ Minoris	......	6·0	49·5	33·0	16·5	23 49·50	− 3·48	33·32	−33·25	18 23 12·77
	α Cygni	55·4	14·2	32·7	51·6	10·2	36 32·82	+ 0·31	33·48	−33·33	20 35 59·80
	κ Aquarii	37·5	50·8	3·9	17·4	30·5	30 4·02	+ 0·55	......	−33·42	22 29 31·15
	ζ Pegasi	38·0	51·4	5·0	18·4	32·1	34 4·98	+ 0·50	33·34	−33·43	22 33 32·05
	α Pegasi	56·4	10·1	23·7	37·6	51·2	57 23·80	+ 0·48	33·36	−33·44	22 56 50·84
	Moon 1 Limb	46·6	0·3	13·8	27·6	41·1	5 13·88	+ 0·55	......	−33·45	23 4 40·98
	(a) Moon 2 Limb	54·2	7·5	21·2	34·8	48·3	7 21·20	+ 0·55	......	−33·45	23 6 48·30
	Uranus	32·0	45·4	58·7	12·1	25·4	11 58·72	+ 0·56	......	−33·45	23 11 25·83
	κ¹ Piscium	53·6	7·1	20·4	33·6	46·8	19 20·30	+ 0·54	......	−33·46	23 18 47·38
	ι Piscium	53·4	6·5	20·0	33·2	46·5	32 19·92	+ 0·52	33·43	−33·47	23 31 46·97
	λ Piscium	3·0	16·3	29·5	43·0	56·2	34 29·60	+ 0·54	......	−33·47	23 33 56·67
	α Ursæ Minoris	48·0	3·5	22·0	41·5	57·0	3 22·40	− 8·41	33·61	−33·53	1 2 40·46
	⁎ D. +31° 54′	43·6	59·4	15·0	......	......	28 14·98	+ 0·40	......	−33·55	1 27 41·83
	⁎ D. +28 23	6·5	21·8	36·8	51·8	6·9	37 36·76	+ 0·42	......	−33·56	1 37 3·62
	α Arietis	19·2	33·4	47·8	2·3	16·5	58 47·84	+ 0·45	33·64	−33·57	1 58 14·72
	⁎ D. +22° 21′	8·6	23·0	37·3	51·5	6·0	5 37·28	+ 0·45	......	−33·62	3 5 4·11
Dec. 5	Moon 1 Limb	38·2	......	6·8	21·0	34·8	36 6·68	+ 0·45	......	−36·37	1 35 30·76
	α Arietis	21·8	36·2	50·6	5·0	19·5	58 50·62	+ 0·41	36·39	−36·38	1 58 14·65
	θ¹ Arietis	26·7	40·6	54·6	8·8	23·0	9 54·74	+ 0·43	......	−36·39	2 9 18·78
	ψ Arietis	15·5	29·4	43·3	57·1	11·1	22 43·28	+ 0·44	......	−36·40	2 22 7·32
	η Tauri	11·3	25·8	40·3	54·8	9·2	38 40·28	+ 0·41	36·39	−36·45	3 38 4·24
	γ¹ Eridani	47·0	0·7	14·5	28·2	41·8	51 14·44	+ 0·57	36·52	−36·46	3 50 38·55
Dec. 6	α Arietis	23·0	37·3	51·8	6·2	20·5	58 51·76	+ 0·38	37·50	−37·50	1 58 14·64
	θ¹ Arietis	27·8	41·8	56·0	10·2	24·2	9 56·00	+ 0·40	......	−37·51	2 9 18·89
	ψ Arietis	16·4	30·6	44·4	58·3	12·2	22 44·38	+ 0·41	......	−37·52	2 22 7·27
Dec. 7	Moon 1 Limb	1·1	16·1	31·2	46·5	1·4	39 31·26	+ 0·36	......	−38·80	3 38 52·82
Dec. 8	α Arietis	25·8	40·2	54·6	9·1	23·5	58 54·64	+ 0·41	40·42	−40·37	1 58 14·68
	γ Ceti	19·0	32·2	45·4	58·8	12·2	35 45·52	+ 0·23	40·27	−40·40	2 35 5·35
	α Ceti	......	26·7	40·0	......	......	54 40·00	+ 0·20	40·25	−40·42	2 53 59·78
	η Tauri	15·6	29·9	44·7	59·2	13·6	38 44·60	+ 0·41	40·69	−40·45	3 38 4·56
Dec. 9	Sun 1 Limb	57·4	12·0	26·2	40·6	55·1	5 26·26	+ 0·70	......	−41·29	17 4 45·67
	Sun 2 Limb	19·2	33·6	48·1	2·7	17·1	7 48·14	+ 0·70	......	−41·29	17 7 7·55
	δ Ursæ Minoris	......	......	56·0	41·0	......	23 56·70	− 2·63	42·89	−41·37	18 23 12·70
	Venus 1 Limb	1·8	16·1	30·8	45·3	0·0	37 30·80	+ 0·61	......	−41·44	19 36 49·97
	γ Aquilæ	55·4	8·9	22·5	35·9	49·3	39 22·40	+ 0·51	41·67	−41·44	19 38 41·47
	α Aquilæ	15·0	28·4	41·8	55·3	8·6	43 41·82	+ 0·52	41·61	−41·45	19 43 0·89
	α Ursæ Minoris	52·5	9·0	26·5	44·0	58·0	3 26·00	− 6·54	43·26	−41·78	1 2 37·68

(a) Dark limb; very faint.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Dec. 9	α Tauri	3·8	17·6	31·4	45·2	59·1	27 31·42	+ 0·49	−41·93	−41·99	4 26 49·92
	α Aurigæ	2·9	22·0	41·0	0·2	19·2	5 41·06	+ 0·36	41·81	−42·03	5 4 59·39
	β Tauri	28·0	43·1	58·1	13·3	28·4	16 58·18	+ 0·44	41·92	−42·04	5 16 16·58
	136 Tauri	33·6	48·2	3·7	18·7	33·7	44 3·58	+ 0·45	......	−42·07	5 43 21·96
	Moon 2 Limb	30·7	46·4	1·8	17·4	32·8	4 1·82	+ 0·45	......	−42·08	6 3 20·19
	ι Geminorum	23·0	37·7	52·3	7·1	21·7	34 52·36	+ 0·46	......	−42·11	6 34 10·71
Dec. 10	γ^1 Eridani	......	7·6	21·3	35·0	48·5	51 21·26	+ 0·53	43·28	−43·10	3 50 38·69
	μ Geminorum	36·4	50·8	5·2	19·5	33.8	14 5·14	+ 0·36	43·10	−43·22	6 13 22·28
	ι Geminorum	24·2	38·8	53·5	8·4	23·0	34 53·58	+ 0·35	......	−43·24	6 34 10·69
	α Canis Majoris	25·1	39·1	53·0	6·8	20·7	38 52·94	+ 0·54	43·23	−43·24	6 38 10·24
	ζ Geminorum	56·6	10·8	25·3	39·4	53·6	55 25·14	+ 0·37	......	−43·25	6 54 42·26
	δ Geminorum	53·3	7·6	22·0	36·4	50·8	11 22·02	+ 0·37	43·24	−43·27	7 10 39·12
	Moon 2 Limb	56·5	11·8	26·8	42·0	57·2	14 26·86	+ 0·34	......	−43·27	7 13 43·93
	Mercury 2 Limb	......	......	......	0·6	14·7	3 46·72	+ 0·55	......	−43·71	16 3 3·56
Dec. 11	α Aquilæ	17·4	30·8	44·3	57·8	11·1	43 44·28	+ 0·35	43·90	−43·92	19 43 0·71
	α Cygni	5·8	24·6	43·4	2·2	20·9	36 43·38	+ 0·06	43·95	−43·97	20 35 59·47
	α Ursæ Minoris	......	......	31·0	49·5	6·0	3 31·76	− 12·66	44·18	−44·19	1 2 34·91
	θ^1 Ceti	22·7	36·2	49·4	3·0	16·2	16 49·50	+ 0·45	44·18	−44·20	1 16 5·75
	α Arietis	29·8	44·2	58·6	13·0	27·5	58 58·62	+ 0·26	44·20	−44·24	1 58 14·64
	γ Ceti	22·8	36·1	49·4	2·8	16·1	35 49·44	+ 0·38	44·35	−44·27	2 35 5·55
	✳ D. + 22° 21′	19·8	34·0	48·2	2·5	17·0	5 48·30	+ 0·26	......	−44·30	3 5 4·26
Dec. 12	α Cygni	7·1	26·0	44·7	3·3	22·2	36 44·66	+ 0·15	45·34	−45·25	20 35 59·56
	ζ Cygni	24·0	39·3	54·5	10·1	24·6	6 54·50	+ 0·29	45·18	−45·27	21 6 9·52
Dec. 13	α Coronæ Borealis	14·3	29·3	44·2	59·0	14·1	28 44·18	+ 0·38	47·92	−47·92	15 27 56·64
Dec. 14	Sun 1 Limb	7·2	21·8	36·4	50·9	5·3	27 36·32	+ 0·74	......	−48·04	17 26 49·02
	Sun 2 Limb	29·3	43·9	58·4	12·9	27·4	29 58·38	+ 0·74	......	−48·04	17 29 11·08
	α Lyræ	45·7	2·5	19·6	36·7	53·5	32 19·60	+ 0·39	48·13	−48·10	18 31 31·89
	γ Aquilæ	1·8	15·4	28·8	42·3	55·8	39 28·82	+ 0·57	48·16	−48·17	19 38 41·22
	α Aquilæ	21·5	34·8	48·3	1·7	15·2	43 48·30	+ 0·58	48·16	−48·18	19 43 0·70
	Venus 1 Limb	18·7	33·1	47·5	1·8	16·3	3 47·48	+ 0·78	......	−48·20	20 3 0·06
Dec. 15	γ Ceti	27·8	41·0	54·3	7·6	20·8	35 54·30	+ 0·68	49·52	−49·71	2 35 5·27
	α Ceti	22·4	35·7	49·1	2·5	15·7	54 49·08	+ 0·67	49·81	−49·73	2 54 0·02
	η Tauri	24·6	39·4	53·5	8·2	22·3	38 53·60	+ 0·57	49·83	−49·76	3 38 4·41
	α Tauri	11·6	25·4	39·3	53·1	7·0	27 39·28	+ 0·61	49·87	−49·80	4 26 50·09
	β Orionis	18·1	31·6	44·9	58·2	11·6	7 44·88	+ 0·73	49·84	−49·83	5 6 55·78
Dec. 16	α Lyræ	48·1	5·0	22·2	39·3	56·2	32 22·16	+ 0·47	50·77	−50·81	18 31 31·82
	ζ Aquilæ	28·0	41·8	55·4	9·1	22·8	58 55·42	+ 0·65	50·85	−50·84	18 58 5·23
	γ Aquilæ	4·4	18·0	31·4	45·0	58·5	39 31·46	+ 0·67	50·91	−50·89	19 38 41·24
	α Aquilæ	24·1	37·5	51·0	4·4	17·8	43 50·96	+ 0·68	50·92	−50·90	19 43 0·74
	Venus 1 Limb	40·1	54·6	9·0	23·4	37·1	14 8·84	+ 0·84	......	−50·93	20 13 18·75
Dec. 17	α Andromedæ	33·0	48·1	3·2	18·3	33·2	1 3·16	+ 0·55	52·51	−52·57	0 0 11·14
	γ Pegasi	28·3	42·0	55·6	9·4	23·1	5 55·68	+ 0·65	52·53	−52·57	0 5 3·76
	α Ursæ Minoris	2·0	20·0	37·0	55·0	......	3 37·03	− 13·08	53·04	−52·63	1 2 31·32
	η Tauri	27·5	42·1	56·5	11·0	25·4	38 56·50	+ 0·58	52·74	−52·78	3 38 4·30
	α Ursæ Minoris S.P.	......	......	......	26·5	44·0	3 9·50	+ 13·10	52·04	−53·34	13 2 29·26
	α Virginis	15·0	28·4	42·1	55·5	9·1	17 42·02	+ 0·80	53·43	−53·35	13 16 49·47
	Moon 2 Limb	5·7	20·2	34·2	48·3	2·3	28 34·14	+ 0·81	......	−53·36	13 27 41·59
	89 Virginis	39·0	53·1	7·0	21·0	35·0	42 7·02	+ 0·85	......	−53·37	13 41 14·50
	η Bootis	31·4	45·6	59·5	13·4	27·4	47 59·46	+ 0·62	53·36	−53·38	13 47 6·70
	α Bootis	49·2	3·2	17·4	31·4	45·5	9 17·34	+ 0·61	53·50	−53·40	14 8 24·55

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Dec. 18	Sun 1 Limb	57·1	11·5	26·0	40·3	55·0	45 25·98	+ 0·91	……	−53·81	17 44 33·08
	α Lyræ	51·3	8·3	25·4	42·5	59·5	32 25·40	+ 0·49	−54·02	−53·87	18 31 32·02
	ζ Aquilæ	31·1	44·8	58·4	12·2	25·9	58 58·48	+ 0·75	54·00	−53·91	18 58 5·32
	Venus 1 Limb	57·6	11·9	26·1	40·6	54·8	24 26·20	+ 0·90	……	−54·02	20 23 33·08
	ζ Cygni	32·5	47·8	3·1	18·3	33·6	7 3·06	+ 0·55	54·07	−54·08	21 6 9·53
	α Ursæ Minoris	4·0	21·0	37·0	……	12·5	3 37·91	−13·43	54·27	−54·38	1 2 30·10
	γ Ceti	32·5	45·8	59·1	12·5	25·7	35 59·12	+ 0·74	54·41	−54·50	2 35 5·36
	α Tauri	16·3	30·1	43·8	57·7	11·6	27 43·90	+ 0·66	54·52	−54·64	4 26 49·92
Dec. 19	α Ceti	28·7	42·2	55·5	8·7	22·1	54 55·44	+ 0·70	56·21	−56·18	2 53 59·96
	α Tauri	18·0	31·7	45·6	59·5	13·4	27 45·64	+ 0·63	56·22	−56·29	4 26 49·98
	α Aurigæ	17·8	36·7	55·8	14·7	33·8	5 55·76	+ 0·38	56·39	−56·34	5 4 59·80
Dec. 20	Mercury 2 Limb	20·2	34·2	48·3	2·7	16·8	26 48·44	+ 0·84	……	−59·00	16 25 50·28
Dec. 21	Sun 2 Limb	44·7	……	13·8	28·6	42·8	1 13·84	+ 0·87	……	−59·13	18 0 15·58
	α Lyræ	56·8	13·7	30·6	47·7	4·6	32 30·68	+ 0·46	59·26	−59·17	18 31 31·97
	α Cygni	21·1	39·6	58·4	17·2	35·7	36 58·40	+ 0·37	59·42	−59·32	20 35 59·45
	Venus 1 Limb	13·2	27·3	41·6	55·9	10·1	39 41·62	+ 0·85	……	−59·32	20 38 43·15
	γ Ceti	38·0	51·2	4·5	17·8	31·1	36 4·52	+ 0·70	59·78	−59·77	2 35 5·45
	α Ceti	32·2	45·6	59·0	12·4	25·6	54 58·96	+ 0·70	59·74	−59·79	2 53 59·87
	∗ D. + 22° 21′	34·2	48·6	3·0	17·4	31·7	6 2·98	+ 0·57	……	−59·81	3 5 3·74
	η Tauri	34·5	49·1	3·5	18·0	32·4	39 3·50	+ 0·56	59·72	−59·85	3 38 4·21
Dec. 22	Sun 1 Limb	51·0	5·5	20·2	34·8	49·2	3 20·14	+ 0·87	……	−61·09	18 2 19·92
	Sun 2 Limb	13·5	27·8	42·4	57·0	11·6	5 42·46	+ 0·87	……	−61·09	18 4 42·24
	δ Ursæ Minoris	49·0	32·5	16·0	0·0	……	24 16·01	− 5·64	61·14	−61·13	18 23 9·24
	α Lyræ	58·5	15·6	32·6	49·7	6·7	32 32·62	+ 0·43	61·17	−61·14	18 31 31·91
	γ Aquilæ	14·7	28·3	41·7	55·3	8·8	39 41·76	+ 0·66	61·19	−61·23	19 38 41·19
	α Aquilæ	34·4	47·8	1·3	14·7	28·2	44 1·28	+ 0·67	61·22	−61·23	19 43 0·72
	β Aquilæ	3·4	16·6	30·0	43·4	56·7	48 30·02	+ 0·68	61·25	−61·24	19 47 29·46
	α Cygni	22·8	41·6	0·3	19·1	37·7	37 0·30	+ 0·36	61·32	−61·31	20 35 59·35
	Venus 1 Limb	15·4	29·7	43·8	58·1	12·2	44 43·84	+ 0·85	……	−61·32	20 43 43·37
	(a) α Ursæ Minoris	……	27·5	44·0	0·0	19·0	2 43·98	−15·00	1·59	− 1·60	1 2 27·38
	α Arietis	46·9	1·1	15·6	30·0	44·5	58 15·62	+ 0·52	1·60	− 1·60	1 58 14·54
	γ Ceti	39·8	53·0	6·4	19·7	33·0	35 6·38	+ 0·67	1·62	− 1·60	2 35 5·45
	α Ceti	34·1	47·4	0·7	14·1	27·6	54 0·78	+ 0·67	1·53	− 1·60	2 53 59·85
	η Tauri	36·3	50·9	5·3	20·0	34·4	38 5·38	+ 0·51	1·55	− 1·60	3 38 4·29
	γ¹ Eridani	12·0	25·8	39·4	53·1	6·7	50 39·40	+ 0·79	1·68	− 1·60	3 50 38·59
	Mercury 2 Limb	16·4	30·5	44·8	59·2	13·2	34 44·82	+ 0·84	……	− 1·53	16 34 44·13
Dec. 23	Sun 1 Limb	18·3	32·8	47·3	1·9	16·5	6 47·36	+ 1·03	……	− 1·52	18 6 46·87
	Sun 2 Limb	40·6	55·1	9·7	24·2	39·0	9 9·72	+ 1·03	……	− 1·52	18 9 9·23
	δ Ursæ Minoris	49·5	32·5	16·0	0·0	……	23 16·13	− 5·83	1·17	− 1·52	18 23 8·78
	α Aquilæ	34·6	48·1	1·5	15·0	28·4	43 1·52	+ 0·81	1·60	− 1·51	19 43 0·82
	α Cygni	23·0	41·7	0·5	19·5	37·8	36 0·50	+ 0·49	1·66	− 1·51	20 35 59·48
	Venus 1 Limb	14·4	29·0	43·2	57·0	11·4	48 43·00	+ 1·01	……	− 1·51	20 48 42·50
	α Ursæ Minoris	8·0	25·0	40·5	58·0	17·0	2 41·70	−14·07	0·97	− 1·48	1 2 26·15
	θ¹ Ceti	39·1	52·6	6·2	19·7	33·1	16 6·14	+ 0·93	1·41	− 1·48	1 16 5·59
	γ Ceti	39·4	52·6	6·0	19·4	32·6	35 6·00	+ 0·85	1·43	− 1·47	2 35 5·38
	α Ceti	33·8	47·1	0·4	13·6	27·1	54 0·40	+ 0·85	1·34	− 1·47	2 53 59·78
Dec. 24	Sun 1 Limb	44·6	59·1	13·4	28·1	42·8	11 13·60	+ 1·09	……	− 1·24	18 11 13·45
	Sun 2 Limb	6·8	21·5	36·1	50·7	5·1	13 36·04	+ 1·09	……	− 1·24	18 13 35·89
	δ Ursæ Minoris	……	32·0	15·0	0·0	42·5	23 15·69	− 6·11	0·55	− 1·24	18 23 8·34
	β Lyræ	40·2	56·0	12·0	27·8	43·8	44 11·96	+ 0·75	1·34	− 1·24	18 44 11·47
	γ Aquilæ	14·5	28·0	41·5	55·1	8·7	38 41·56	+ 0·85	1·17	− 1·22	19 38 41·19
	α Aquilæ	34·2	47·6	1·1	14·6	28·0	43 1·10	+ 0·86	1·23	− 1·22	19 43 0·74

(a) At 21^{h} stopped clock, adjusted pendulum and set clock agoing nearly with sidereal time.

Date.	OBJECT OBSERVED.	Wire.					Reduction to Mean of Wires.	Correction of Instrument.	Correction of Clock		Apparent Right Ascension observed.
		I.	II.	III.	IV.	V.			observed.	interpolated.	
		s.	s.	s.	s.	s.	m. s.	s.	s.	s.	h. m. s.
Dec. 24	Venus 1 Limb	11·8	25·9	40·1	54·2	8·3	53 40·06	+ 1·06	......	− 1·21	20 53 39·91
	α Ursæ Minoris	......	24·0	41·0	59·0	......	2 41·24	− 14·77	− 0·55	− 1·15	1 2 25·32
	α Ceti	33·4	46·7	0·1	13·5	26·7	54 0·08	+ 0·90	1·07	− 1·13	2 53 59·85
	β Orionis	29·1	42·5	55·9	9·4	22·8	6 55·94	+ 0·98	1·09	− 1·10	5 6 55·82
Dec. 26	Sun 1 Limb	37·1	51·5	6·1	20·7	35·1	20 6·10	+ 0·96	......	− 0·44	18 20 6·62
	Sun 2 Limb	59·5	13·9	28·5	43·1	57·7	22 28·54	+ 0·96	......	− 0·44	18 22 29·06
	δ Ursæ Minoris	48·0	......	......	59·0	41·5	23 15·00	− 5·55	0·63	− 0·44	18 23 9·01
	ζ Aquilæ	37·6	51·4	5·1	18·7	32·4	58 5·04	+ 0·72	0·49	− 0·44	18 58 5·32
	γ Aquilæ	14·0	27·5	41·0	54·5	7·9	38 40·98	+ 0·75	0·49	− 0·42	19 38 41·31
	Moon 1 Limb	0·8	15·5	30·0	44·6	59·3	26 30·04	+ 0·94	......	− 0·41	20 26 30·57
	Venus 1 Limb	1·2	15·4	29·5	43·7	57·7	3 29·50	+ 0·93	......	− 0·40	21 3 30·03
	ζ Cygni	38·5	53·8	9·2	24·5	39·7	6 9·14	+ 0·60	0·27	− 0·40	21 6 9·34
Dec. 28	β Orionis	27·3	40·5	53·8	7·5	21·0	6 54·02	+ 0·88	+ 0·94	+ 0·80	5 6 55·70
	β Tauri	45·4	0·4	15·5	30·6	45·6	16 15·50	+ 0·63	0·78	+ 0·81	5 16 16·94
	δ Orionis	27·0	40·3	53·5	6·8	20·0	23 53·52	+ 0·83	0·71	+ 0·81	5 23 55·16
	ε Orionis	42·7	55·8	9·2	22·4	35·6	28 9·14	+ 0·84	0·81	+ 0·81	5 28 10·79
	α Orionis	7·5	21·0	34·4	47·8	1·1	46 34·36	+ 0·78	0·79	+ 0·82	5 46 35·96
	Mercury 2 Limb	24·2	38·5	52·7	7·2	21·6	5 52·84	+ 0·97	......	+ 0·87	17 5 54·68
	δ Ursæ Minoris	46·0	30·0	13·0	57·0	40·5	23 13·30	− 5·53	......	+ 0·88	18 23 8·65
Dec. 29	Sun 1 Limb	54·6	9·1	23·7	38·2	52·7	33 23·66	+ 1·10	......	+ 0·88	18 33 25·64
	Sun 2 Limb	16·7	31·2	45·7	0·4	14·8	35 45·76	+ 1·10	......	+ 0·88	18 35 47·74
	β Lyræ	38·2	54·0	9·8	25·8	41·6	44 9·88	+ 0·71	0·82	+ 0·88	18 44 11·47
	γ Aquilæ	12·4	26·0	39·5	53·0	6·6	38 39·50	+ 0·93	0·83	+ 0·88	19 38 41·31
	α Aquilæ	32·1	45·5	59·0	12·5	26·0	42 59·02	+ 0·90	0·83	+ 0·89	19 43 0·81
	Venus 1 Limb	33·8	47·8	1·6	15·8	29·9	18 1·78	+ 1·06	......	+ 0·89	21 18 3·73
	σ Aquarii	44·6	58·2	11·7	25·4	39·0	22 11·78	+ 1·02	......	+ 0·90	22 22 13·70
	ϰ Aquarii	2·7	16·2	29·5	42·7	56·1	29 29·44	+ 0·98	......	+ 0·90	22 29 31·32
	ζ Pegasi	3·0	16·6	30·1	43·5	57·1	33 30·06	+ 0·89	0·92	+ 0·90	22 33 31·85
	Moon 1 Limb	25·6	39·2	52·8	6·5	20·1	47 52·84	+ 0·98	......	+ 0·90	22 47 54·72
	α Pegasi	21·2	35·0	48·7	2·5	16·1	56 48·70	+ 0·86	1·07	+ 0·90	22 56 50·46
	φ Aquarii	36·5	49·8	3·1	16·6	29·9	6 3·18	+ 0·99	......	+ 0·90	23 6 5·07
	Uranus	39·3	52·5	6·0	19·3	32·6	13 5·94	+ 0·99	......	+ 0·90	23 13 7·83
	$\varkappa^1$ Piscium	18·5	31·8	45·0	58·3	11·5	18 45·02	+ 0·95	......	+ 0·90	23 18 46·87
	α Ursæ Minoris	0·5	17·5	34·5	50·0	9·0	2 34·30	− 13·24	1·15	+ 0·91	1 2 21·97
	∗ D. + 31° 54′	8·5	24·2	40·0	55·5	11·0	27 39·84	+ 0·72	......	+ 0·91	1 27 41·47
	∗ D. + 25 49	22·8	37·5	52·1	6·9	21·7	4 52·20	+ 0·77	......	+ 0·93	4 4 53·90
Dec. 30	α Ursæ Minoris	0·0	......	......	51·5	8·0	2 33·97	− 14·14	1·62	+ 1·76	1 2 21·59
	η Tauri	33·0	47·4	2·0	16·5	30·8	38 1·94	+ 0·63	1·75	+ 1·73	3 38 4·30
	α Aurigæ	19·5	38·5	57·8	16·8	35·8	4 57·68	+ 0·40	1·75	+ 1·76	5 4 59·84
	β Orionis	26·3	39·8	53·2	6·8	20·1	6 53·24	+ 0·86	1·74	+ 1·76	5 6 55·86
	β Tauri	44·3	59·3	14·5	29·6	44·7	16 14·48	+ 0·59	1·85	+ 1·77	5 16 16·84
	δ Orionis	26·0	39·2	52·5	5·9	19·1	23 52·54	+ 0·80	1·73	+ 1·77	5 23 55·11
Dec. 31	Sun 1 Limb	45·0	59·5	14·1	......	43·0	42 14·02	+ 0·84	......	+ 1·92	18 42 16·78
	α Aquilæ	31·4	44·8	58·3	11·7	25·1	42 58·26	+ 0·67	1·83	+ 1·93	19 43 0·86
	ε Pegasi	52·9	6·3	19·7	33·1	46·6	36 19·72	+ 0·66	1·82	+ 1·96	21 36 22·34
	Moon 1 Limb	35·8	49·3	......	......	......	21 3·04	+ 0·67	......	+ 1·98	0 21 5·69
	α Ursæ Minoris	......	......	......	47·0	5·0	2 29·83	− 11·24	2·10	+ 1·99	1 2 20·58
	α Ceti	30·4	43·8	57·1	10·4	23·7	53 57·08	+ 0·69	2·09	+ 2·01	2 53 59·78
	η Tauri	32·8	47·2	1·5	16·2	30·6	38 1·66	+ 0·58	2·08	+ 2·02	3 38 4·26
	∗ D. + 25° 49′	21·9	36·4	51·2	6·1	20·8	4 51·28	+ 0·56	......	+ 2·02	4 4 53·86
	α Tauri	19·5	33·3	47·2	1·1	14·9	26 47·20	+ 0·62	2·26	+ 2·03	4 26 49·85
	δ Ursæ Minoris	45·0	29·0	......	56·0	......	23 12·13	− 5·69	2·09	+ 2·00	18 23 8·44
	α Lyræ	55·6	12·4	29·5	46·6	3·6	31 29·54	+ 0·38	2·00	+ 2·00	18 31 31·92

ROYAL OBSERVATORY, EDINBURGH.

MEAN RIGHT ASCENSIONS

OF THE

STARS OBSERVED IN THE YEAR 1840,

REDUCED TO JANUARY 1. 1840.

α Andromedæ.	h.	m.	s.
Feb. 7	0	0	7·64
26			7·86
27			7·84
Mar. 2			7·78
4			7·75
5			7·76
6			7·81
9			7·76
Apr. 2			7·84
Sept. 13			7·64
Oct. 13			7·57
20			7·87
Nov. 4			7·61
5			7·74
7			7·74
10			7·81
11			7·66
12			7·86
14			7·83
18			7·66
19			7·76
20			7·89
Dec. 17			7·68

* D. + 49° 55′			
Oct. 7	0	1	47·71
8			47·50
9			47·42

γ Pegasi.			
Feb. 7	0	5	0·06
8			0·12
11			0·07
12			0·19
15		4	59·95
27		5	0·18
Sept. 13			0·25
Oct. 13			0·05
23			0·21
Nov. 4			0·17
5			0·18
6			0·42
7			0·30
11			0·13
14			0·14
18			0·15
19			0·23
Dec. 17			0·15

35 Piscium.			
Oct. 9	0	6	44·38

β Ceti.	h.	m.	s.
Oct. 11	0	35	33·06
Nov. 2			33·31
11			33·28
14			33·32
19			33·32
24			33·37
26			33·34
27			33·54

58 Piscium.			
Feb. 7	0	38	40·85
8			40·99

δ Piscium.			
Sept. 13	0	40	23·31
Nov. 7			23·31

ε Piscium.			
Feb. 8	0	54	38·55
Oct. 11			38·48
Nov. 7			38·64

* D. + 39° 8′			
Oct. 22	0	55	37·89
24			38·19
Nov. 2			37·93

* D. + 38° 24′			
Nov. 10	0	59	1·28
19			0·98
23			0·78

* D. + 38° 56′			
Oct. 24	1	0	34·74
Nov. 2			34·61
7			34·75

α Ursæ Minoris.	h.	m.	s.
Jan. 4	1	2	14·84
6			15·74
7			10·95
14			12·07
15			11·94
16			11·53
17			13·68
20			10·92
22			10·19
25			10·15
27	1	2	10·00
29			10·37
31			9·88
Feb. 7			9·71
11			10·91
15			10·23
25			10·87
26			12·92
27			14·05
29			11·75
Mar. 5			10·43
6			10·60
7			12·35
9			11·37
17			10·48
18			11·03
28			10·60
31			10·84
Apr. 13			11·60
15			10·72
16			10·89
17			13·25
21			11·75
23			12·46
24			9·23
26			8·75
29			10·92
May 1			10·00
Oct. 11			10·99
12			8·72
19			11·70
22			10·54
24			11·55
Nov. 4			11·26
5			10·02
7			11·62
11			11·01
18			10·63
19			10·46
20			13·56
24			12·30
26			10·80
27			10·62
28			9·99
30			10·13
Dec. 1			12·26
2			10·81
9			12·21
11			10·72
17			11·14
18			10·62
22			10·72
23			10·22
24			10·13
31			10·62

α Ursæ Minoris S.P.	h.	m.	s.
Apr. 15	1	2	11·84
16			9·47
17			9·00
18			11·06
20			10·23
21			11·03
23			10·81
24			12·95
25			11·47
27			9·21
28			12·35
29			10·32
May 1			12·80
2			8·60
July 7			10·82
9			11·23
16			10·95
30			11·45
Aug. 1			12·37
4			11·81
9			10·37
14			11·39
22			11·49
24			12·98
29			13·23
31			10·34
Sept. 3			11·62
4			10·95
10			9·30
11			8·69
21			10·02
25			10·99
Oct. 2			11·60
8			11·57
9			10·14
11			11·37
12			11·13
18			13·87
21			11·48
23			10·76
Nov. 5			12·06
11			13·29
18			11·44
19			11·40
26			12·02
27			12·72
Dec. 17			9·43

* D. + 38° 13′			
Nov. 10	1	4	8·23
23			8·36
26			8·29

* D. + 37° 38′	h.	m.	s.
Oct. 24	1	6	22·84
Nov. 4			22·77
10			22·64

* D. + 37° 37′			
Oct. 22	1	7	53·32
24			53·51
Nov. 2			53·31

* D. + 37° 25′			
Nov. 4	1	8	31·81
10			31·52
23			31·74

θ¹ Ceti.			
Jan. 7	1	16	1·66
12			1·66
15			1·65
24			1·62
25			1·63
29			1·48
Feb. 10			1·53
Oct. 11			1·66
Nov. 2			1·65
23			1·52
27			1·42
Dec. 11			1·59
23			1·54

* D. + 34° 54′			
Oct. 22	1	16	4·58
24			4·65
Nov. 4			4·66

* D. + 35° 8′			
Nov. 7	1	16	19·48
10			19·30
19			19·20
26			19·32

η Piscium.			
Jan. 12	1	22	55·77
Oct. 11			55·93
Nov. 7			55·96

* D. + 31° 54′			
Dec. 2	1	27	37·32
29			37·22

∗ D. + 32° 4′	
	h. m. s.
Oct. 22	1 27 43·63
24	43·73
Nov. 2	43·60

π Piscium.	
Feb. 8	1 28 37·47

∗ D. + 31° 20′	
Oct. 22	1 29 55·48
24	55·52
Nov. 2	55·47

∗ D. + 31° 14′	
Oct. 22	1 32 52·69
24	52·75
Nov. 2	52·86

∗ D. + 30° 21′	
Nov. 27	1 33 8·96
30	9·08
Dec. 1	9·14

∗ D. + 28° 23′	
Nov. 27	1 36 59·07
Dec. 1	59·19
2	59·07

β Arietis.	
Jan. 12	1 45 48·75
Feb. 8	48·67
Nov. 7	48·88

α Arietis.	
Jan. 12	1 58 9·97
21	10·24
22	10·07
24	9·93
25	10·07
27	10·07
29	10·13
30	10·09
31	10·06
Feb. 8	9·89
24	10·00
27	9·97

α Arietis.	
	h. m. s.
Mar. 2	1 58 10·05
4	9·97
5	10·07
6	10·06
8	10·22
9	10·03
17	10·11
18	10·05
28	9·99
31	9·93
Apr. 3	9·93
13	9·94
Oct. 11	10·20
Nov. 2	9·95
25	10·03
26	9·89
27	9·96
Dec. 2	10·09
5	10·03
6	10·02
8	10·07
11	10·04
22	10·02

θ^1 Arietis.	
Oct. 12	2 9 13·92
Dec. 5	14·14
6	14·25

ψ Arietis.	
Oct. 12	2 22 2·23
Dec. 5	2·63
6	2·58

ν Arietis.	
Feb. 10	2 29 44·51

γ Ceti.	
Jan. 20	2 35 1·01
22	1·09
24	0·89
30	0·91
Feb. 3	0·93
8	0·95
10	0·95
Nov. 14	0·93
25	0·91
26	0·98
Dec. 8	0·79

γ Ceti.	
	h. m. s.
Dec. 11	2 35 1·00
15	0·73
18	0·83
21	0·93
22	0·94
23	0·88

ε Arietis.	
Feb. 10	2 50 4·51

α Ceti.	
Jan. 3	2 53 55·32
4	55·25
Feb. 3	55·37
8	55·36
10	55·36
Mar. 5	55·30
20	55·38
28	55·26
Nov. 25	55·23
26	55·29
Dec. 8	55·13
15	55·38
19	55·33
21	55·25
22	55·23
23	55·17
24	55·24
31	55·22

∗ D. + 22° 21′	
Dec. 2	3 4 59·07
11	59·20
21	58·70

η Tauri.	
Jan. 3	3 37 59·09
4	58·92
7	59·05
16	59·11
Feb. 10	59·12
Mar. 8	58·98
9	59·06
18	59·10
28	59·06
Apr. 3	59·11
14	59·08
Nov. 10	58·93

η Tauri.	
	h. m. s.
Nov. 25	3 37 59·12
Dec. 5	58·99
8	59·29
15	59·12
17	59·01
21	58·92
22	59·00
30	59·03
31	58·99

γ^1 Eridani.	
Jan. 3	3 50 33·93
4	34·06
7	34·08
Feb. 11	34·15
13	34·10
24	33·96
Dec. 5	34·03
10	34·15
22	34·05

37 Tauri.	
Feb. 10	3 55 14·83
Nov. 10	14·52

∗ D. + 25° 49′	
Dec. 29	4 4 48·37
31	48·33

υ^1 Tauri.	
Mar. 9	4 16 44·45
Apr. 6	44·58

α Tauri.	
Jan. 3	4 26 44·72
4	44·69
7	44·68
21	44·71
22	44·83
24	44·72
25	44·85
30	44·72
Feb. 10	44·76
11	44·72
12	44·93
25	44·73

α Tauri.	
	h. m. s.
Mar. 8	4 26 44·63
9	44·74
31	44·77
Apr. 3	44·76
4	44·76
6	44·77
14	44·80
15	44·71
16	44·77
17	44·75
27	44·60
May 1	44·90
2	44·75
Dec. 9	44·69
15	44·82
18	44·63
19	44·68
31	44·52

τ Tauri.	
Mar. 9	4 32 38·95

ι Aurigæ.	
Feb. 12	4 46 35·17

ι Tauri.	
Feb. 12	4 53 32·52

α Aurigæ.	
Jan. 3	5 4 52·79
15	52·77
16	52·65
18	52·71
21	52·84
22	52·56
24	52·85
25	52·72
30	52·66
31	52·78
Feb. 3	52·75
4	52·72
6	52·73
12	52·58
13	52·73
25	52·71
26	52·68
29	52·74
Mar. 4	52·69
6	52·72

α Aurigæ.	h.	m.	s.
Mar. 7	5	4	52·94
11			52·86
14			52·84
Apr. 6			52·78
14			52·65
15			52·71
18			52·78
24			52·78
25			52·51
27			52·50
30			52·81
May 1			52·86
2			52·87
21			52·77
22			52·72
June 2			52·61
3			52·71
Aug. 21			52·67
Nov. 23			52·74
Dec. 9			52·55
19			52·82
30			52·78

β Orionis.			
Jan. 7	5	6	50·92
15			51·00
21			50·86
22			50·97
25			50·95
27			50·97
31			51·16
Feb. 3			51·13
6			50·97
7			51·03
12			51·03
13			51·04
26			51·04
29			50·99
Mar. 4			51·04
6			51·03
7			51·12
11			51·01
Apr. 6			50·99
14			51·03
17			50·95
18			50·90
24			51·00
May 1			51·03
Nov. 23			51·04
Dec. 15			51·06
24			51·04
28			50·91
30			51·07

β Tauri.	h.	m.	s.
Jan. 14	5	16	10·80
15			10·88
16			10·83
17			11·01
18			11·01
21			10·89
Feb. 3			10·76
6			10·87
7			11·07
12			10·91
13			10·94
25			10·95
29			10·93
Mar. 5			10·85
11			10·98
12			10·98
14			10·95
Apr. 6			10·91
15			10·86
24			10·90
27			11·11
30			10·77
May 2			10·95
21			10·95
26			10·95
Nov. 23			10·94
Dec. 9			10·78
28			10·93
30			10·82

δ Orionis.			
Jan. 14	5	23	50·32
Feb. 6			49·99
7			50·05
Mar. 11			50·04
12			50·17
14			50·03
Apr. 6			50·08
Nov. 23			50·10
Dec. 28			50·14
30			50·08

ι Orionis.			
Dec. 28	5	28	5·79

26 Aurigæ.			
Jan. 16	5	28	21·79
Apr. 6			21·97

136 Tauri.	h.	m.	s.
Feb. 12	5	43	16·39
13			16·35
Dec. 9			16·17

α Orionis.			
Jan. 18	5	46	30·68
Feb. 4			30·62
13			30·55
15			30·65
Apr. 24			30·60
25			30·70
29			30·69
30			30·67
May 26			30·59
Dec. 28			30·69

κ Aurigæ.			
Jan. 16	6	5	10·85
17			10·87
12			11·05
13			10·81

μ Geminorum.			
Jan. 17	6	13	16·67
Feb. 4			16·92
8			16·95
11			16·83
15			16·79
24			16·78
Mar. 11			16·72
21			16·85
28			16·75
Dec. 10			16·70

ε Geminorum.			
Jan. 16	6	34	5·24
17			4·94
Dec. 9			5·06
10			5·01

α Canis Majoris.			
Feb. 4	6	38	5·91
24			5·85
25			5·96
26			5·92
27			5·91
29			5·91
Mar. 4			6·01
5			5·89

α Canis Majoris.	h.	m.	s.
Mar. 6	6	38	5·86
9			5·89
17			5·75
18			5·84
20			5·87
28			6·00
31			5·90
Apr. 4			5·87
14			5·96
16			5·91
18			5·90
30			5·98
May 2			5·89
17			5·86
20			5·98
26			5·99
Dec. 10			5·90

ζ Geminorum.			
Dec. 10	6	54	36·81

τ Geminorum.			
Feb. 13	7	0	56·91
Mar. 12			56·80

δ Geminorum.			
Jan. 17	7	10	33·59
18			33·71
Feb. 13			33·65
15			33·82
20			33·61
24			33·72
29			33·72
Mar. 7			33·52
12			33·66
Apr. 4			33·67
10			33·58
Dec. 10			33·66

∗ D. + 10° 56′			
Feb. 3	7	17	38·62
13			38·35
15			38·27
24			38·53

∗ D. + 11° 20′			
Feb. 25	7	17	50·07
26			50·01
29			50·00
Mar. 2			49·91

α Geminorum preced.	h.	m.	s.
Feb. 15	7	24	22·41
20			22·50
24			22·50
Mar. 2			22·39

α Geminorum follow.			
Feb. 14	7	24	22·70
15			22·88
20			22·90
24			23·00
Mar. 2			22·84
7			22·75
12			22·78
13			22·82
14			22·84
15			22·89
17			22·80
18			22·90
20			22·89
31			22·84
Apr. 4			22·89
15			22·86
23			22·74
May 17			22·88
18			23·00
21			22·86
25			22·91
June 19			22·79

α Canis Minoris.			
Feb. 14	7	30	55·28
20			55·29
27			55·30
Mar. 2			55·19
12			55·23
13			55·26
14			55·21
15			55·27
17			55·35
18			55·23
20			55·18
31			55·32
Apr. 3			55·27
4			55·23
23			55·26
May 17			55·28
20			55·19
22			55·28
25			55·28
June 3			55·33
13			55·24
20			55·34
July 31			55·17

β Geminorum.	h.	m.	s.
Jan. 17	7	35	30·87
18			30·86
Feb. 14			31·07
15			31·04
Mar. 2			30·89
12			30·85
13			30·92
14			30·86
15			30·89
20			30·96
Apr. 3			30·97
23			30·92
May 17			30·94
22			31·03
25			30·90
29			31·05
June 17			30·90
20			30·92

φ Geminorum.			
Mar. 12	7	43	41·59
13			41·76

θ Cancri.			
Jan. 18	8	22	27·88
19			27·83
Feb. 14			27·80

η Cancri.			
Oct. 18	8	23	26·56

δ Cancri.			
Jan. 18	8	35	34·95
19			34·87
Mar. 13			35·08
Apr. 9			35·00
Sept. 20			35·12
Oct. 18			34·96

ε Hydræ.			
Jan. 19	8	38	17·82
Mar. 13			17·89
19			17·90
21			17·84
Apr. 25			17·87
Sept. 20			17·81
Oct. 18			17·77

α Hydræ.	h.	m.	s.
Jan. 19	9	19	43·50
Mar. 19			43·40
Apr. 2			43·48
10			43·48
28			43·54
Oct. 18			43·22

λ Leonis.			
Apr. 10	9	22	34·80

ο Leonis.			
Oct. 18	9	32	36·14

ε Leonis.			
Feb. 22	9	36	45·38
Mar. 13			45·43
19			45·48
Apr. 2			45·37
28			45·47
Oct. 18			45·26

α Leonis.			
Feb. 22	9	59	50·66
Mar. 3			50·52
16			50·50
19			50·64
Apr. 10			50·58
20			50·57
28			50·69
June 22			50·59
July 1			50·58
Oct. 18			50·54
19			50·56

ϱ Leonis.			
Mar. 16	10	24	22·84

34 Sextantis.			
Mar. 16	10	34	21·55

χ Leonis.			
Apr. 13	10	56	45·63
Nov. 16			45·62

69 Leonis.	h.	m.	s.
Nov. 16	11	5	34·13

δ Leonis.			
Mar. 16	11	5	35·27
17			35·44
19			35·37
Apr. 10			35·41
13			35·49
20			35·44
June 1			35·47
July 27			35·38

75 Leonis.			
Apr. 13	11	9	3·36

δ Hydræ and Crateris.			
Apr. 10	11	11	20·82
Nov. 16			20·70
17			20·70

σ Leonis.			
Mar. 16	11	12	52·89
17			53·02

υ Leonis.			
Mar. 16	11	28	45·44
17			45·45
June 7			45·45
Nov. 17			45·33
18			45·50

β Leonis.			
Mar. 16	11	40	53·57
18			53·62
Apr. 20			53·60
21			53·62
28			53·55
May 28			53·68
June 7			53·61
July 27			53·63
Aug. 11			53·58
22			53·52
Nov. 16			53·55
17			53·51

β Virginis.	h.	m.	s.
Nov. 17	11	42	21·56
18			21·60

7 Virginis.			
Mar. 17	11	51	45·17
18			45·20

η Virginis.			
Mar. 17	12	11	43·33
18			43·25
June 7			43·40

21 Virginis.			
Apr. 15	12	25	31·64

γ Virginis.			
Apr. 15	12	33	33·28
Nov. 18			33·37
19			33·17

ψ Virginis.			
Mar. 19	12	46	2·28

12 Canum Venaticorum.	h.	m.	s.
Apr. 15	12	48	32·05
17			32·12
20			32·01
21			31·98
29			32·00
May 20			31·98
22			31·93
23			31·99
28			32·03
June 1			32·14
3			32·02
7			31·94
8			32·01
13			31·85
17			31·92
18			32·07
22			31·97
25			32·01
July 1			32·00
7			32·13
17			32·02
July 27	12	48	31·97
30			31·96
Aug. 2			31·93
11			31·87
Oct. 18			31·86
21			31·88
26			31·86
28			31·93
29			31·91
Nov. 18			32·08
19			31·88

49 Virginis.			
Mar. 19	12	59	31·29

53 Virginis.			
Apr. 15	13	3	33·09
16			33·18

α Virginis.			
Apr. 15	13	16	46·36
16			46·23
May 30			46·33
June 2			46·30
7			46·30
10			46·30
23			46·30
July 7			46·23
17			46·25
28			46·29
30			46·35
Aug. 1			46·13
30			46·22
31			46·23
Dec. 17			46·38

89 Virginis.			
June 10	13	41	11·28
Dec. 17			11·50

η Bootis.			
Apr. 16	13	47	4·06
21			3·95
29			3·99
May 20			3·97
28			3·97
29			3·95
30			3·95

η Bootis.	h.	m.	s.
June 1	13	47	3·73
2			3·97
7			3·94
8			3·87
10			3·94
17			3·94
19			3·95
22			3·94
July 1			4·00
7			3·99
16			3·98
Aug. 18			3·83
22			3·97
24			3·92
31			3·95
Sept. 15			3·91
23			3·97
Oct. 17			3·80
Dec. 17			3·93

α Bootis.			
Jan. 26	14	8	22·03
Apr. 16			21·83
17			21·91
18			21·93
20			21·91
21			21·87
22			21·92
23			21·97
27			22·00
29			21·86
May 23			21·91
28			21·87
29			21·86
30			21·92
June 2			21·86
3			21·86
10			21·79
13			21·83
16			21·85
25			21·88
30			21·89
July 7			21·89
9			21·87
Aug. 4			21·92
15			21·83
18			21·74
22			21·88
24			21·87
26			21·73
30			21·89
31			21·83

α Bootis.	h.	m.	s.
Sept. 7	14	8	21·74
10			21·78
11			21·81
12			22·07
15			21·93
19			21·93
23			21·82
25			21·96
Oct. 1			22·07
5			22·02
9			22·04
12			22·00
13			22·00
19			21·88
20			21·94
29			21·94
Nov. 18			21·94
Dec. 17			22·02

λ Virginis.			
Jan. 26	14	10	27·85
Apr. 16			27·58
17			27·65
June 10			27·59

ε Bootis.			
Jan. 26	14	37	59·96
Apr. 21			59·96
22			59·87
23			60·04
25			60·01
27			60·00
28			59·86
29			59·91
May 1			59·85
2			59·83
June 2			59·97
8			59·87
10			59·87
13			60·05
14			59·94
18			59·91
19			59·91
22			59·99
30			59·97
July 9			60·03
17			60·05
Aug. 4			59·91
14			59·87
29			60·04
30			59·97
Sept. 7			59·92

ε Bootis.	h.	m.	s.
Sept. 11	14	37	59·92
19			60·03
21			60·03
23			60·01
25			60·12
Oct. 8			60·12
12			60·00

α² Libræ.			
Apr. 17	14	42	2·13
18			2·34
22			2·31
24			2·33
25			2·51
May 1			2·16
2			2·23
25			2·21
June 8			2·21
14			2·28
18			2·18
30			2·20

20 Libræ.			
Jan. 26	14	54	43·25
Apr. 17			43·13

β Libræ.			
Aug. 30	15	8	24·33

α Coronæ Borealis.			
May 18	15	27	54·89
20			54·91
21			54·85
26			54·85
28			54·78
29			54·84
30			54·85
June 2			55·02
8			55·03
10			55·06
20			54·77
23			54·81
30			54·90
July 9			54·89
10			54·95
Aug. 14			54·81
Sept. 12			55·03
21			54·95
24			54·92
Oct. 2			54·96

α Coronæ Borealis.	h.	m.	s.
Oct. 8	15	27	54·99
9			54·93
13			54·92
14			54·95
19			54·91
20			54·78
22			54·85
30			54·87
Nov. 17			54·95
18			54·81

α Serpentis.			
May 18	15	36	23·37
20			23·41
21			23·46
25			23·43
26			23·39
29			23·46
30			23·42
June 13			23·61
14			23·48
16			23·41
17			23·46
19			23·38
20			23·48
July 1			23·48
10			23·41
Oct. 24			23·32

1 Scorpii.			
Apr. 18	15	41	22·20

δ Scorpii.			
Apr. 18	15	50	53·05

β¹ Scorpii.			
May 18	15	56	8·42
June 16			8·61
Aug. 6			8·52

δ Ophiuchi.			
Feb. 25	16	5	57·92
May 18			58·03
June 3			57·96
16			57·88
July 16			57·94
Aug. 6			58·02
Sept. 3			57·93

σ Scorpii.	h.	m.	s.
Feb. 25	16	11	28·40
June 13			28·47

α Scorpii.			
Feb. 25	16	19	36·39
June 13			36·46
14			36·39
July 10			36·42
Aug. 6			36·36
Sept. 3			36·26

* D. + 3° 2′			
May 26	16	40	18·17
28			18·16
29			18·11

36 Ophiuchi following.			
Feb. 26	17	5	31·21

α Herculis.			
Feb. 26	17	7	21·23
June 23			21·22
28			21·07
30			21·19
July 1			21·15
9			21·31
15			21·49
16			21·14
17			21·17
24			24·23
25			21·27
29			21·23
Aug. 1			21·25
3			21·27
4			21·28
5			21·17
15			21·12
24			21·18
29			21·28
Sept. 3			21·22
4			21·17
5			21·06
8			21·07
Oct. 2			21·25
Nov. 3			21·20
7			21·15
12			21·15
28			21·20
30			21·35
Dec. 1			21·35

θ Ophiuchi.	h. m. s.
Feb. 26	17 12 11·38

α Ophiuchi.	
Jan. 5	17 27 30·45
13	30·50
Feb. 26	30·57
June 16	30·63
17	30·65
23	30·71
28	30·44
July 25	30·47
29	30·51
Aug. 1	30·51
3	30·56
5	30·54
8	30·52
9	30·55
13	30·36
15	30·49
25	30·49
26	30·49
Sept. 4	30·47
5	30·44
8	30·41
Oct. 28	30·59
Nov. 7	30·42
11	30·49
12	30·46
19	30·49
20	30·44
24	30·56
30	30·63
Dec. 1	30·55

* D. + 2° 9′	
June 28	17 31 0·11
July 1	0·27

Piazzi XVII. 177.	
July 16	17 31 3·65

γ² Sagittarii.	
Mar. 25	17 55 31·80

λ Sagittarii.	
July 13	18 18 5·47
Aug. 8	5·48
Oct. 3	5·86

δ Ursæ Minoris.	h. m. s.
Jan. 3	18 23 56·16
5	56·92
13	55·53
16	55·30
19	55·16
20	55·07
31	55·17
Feb. 10	55·10
25	55·76
26	56·25
June 17	55·79
19	56·81
20	56·66
23	56·04
30	55·59
July 7	55·57
9	56·37
16	55·62
30	55·59
Aug. 1	55·28
4	55·80
9	55·40
14	56·50
22	56·08
24	55·36
29	55·35
31	56·85
Sept. 3	56·35
4	54·56
10	56·33
11	57·14
21	56·50
25	56·69
Oct. 2	56·79
8	56·53
9	56·52
12	56·63
19	55·53
20	56·20
Nov. 7	55·27
11	55·57
18	55·16
19	55·60
24	55·75
26	54·68
27	55·91
28	54·83
30	56·19
Dec. 1	57·50
2	55·67
9	57·12
22	55·61
23	55·25
24	54·91
31	55·51

δ Ursæ Minoris S.P.	h. m. s.
Jan. 4	18 23 56·30
6	56·95
7	56·03
14	55·68
15	56·03
16	56·38
17	55·29
21	54·96
22	55·29
25	55·00
27	55·11
29	55·34
31	55·29
Feb. 7	54·74
15	54·87
25	55·47
26	55·85
27	56·27
29	56·76
Mar. 5	55·40
6	55·78
7	57·37
9	56·36
17	55·39
18	55·90
28	56·47
31	55·63
Apr. 4	56·01
14	55·35
16	56·23
18	55·75
24	55·75
25	56·98
27	57·34
30	56·50
May 2	55·83
Aug. 22	56·39

α Lyræ.	
Jan. 5	18 31 31·25
10	31·37
13	31·36
19	31·29
20	31·15
Feb. 26	31·12
Mar. 25	31·25
June 28	31·51
July 6	31·23
7	31·17
9	31·10
13	31·24
24	31·29
29	31·33
Aug. 3	31·19

α Lyræ.	h. m. s.
Aug. 9	18 31 31·24
13	31·36
18	31·27
26	31·29
Sept. 29	31·32
Oct. 13	31·39
14	31·46
22	31·13
28	31·34
Nov. 17	31·27
Dec. 14	31·29
16	31·22
17	31·41
21	31·35
22	31·29
31	31·24

φ Sagittarii.	
Sept. 5	18 35 39·38

β Lyræ.	
Jan. 5	18 44 10·52
19	10·33
20	10·42
Feb. 5	10·51
23	10·42
Mar. 25	10·39
June 19	10·52
20	10·39
23	10·27
July 6	10·41
13	10·40
15	10·32
16	10·38
17	10·30
24	10·47
29	10·35
30	10·36
Aug. 1	10·33
3	10·36
5	10·35
6	10·39
8	10·41
9	10·41
12	10·49
14	10·38
15	10·58
22	10·52
25	10·38
26	10·57
28	10·34

β Lyræ.	h. m. s.
Aug. 29	18 44 10·34
31	10·52
Sept. 4	10·44
5	10·46
8	10·47
10	10·50
14	10·41
19	10·32
26	10·53
30	10·66
Oct. 2	10·48
3	10·52
7	10·64
8	10·45
9	10·43
12	10·46
14	10·39
27	10·38
28	10·30
30	10·37
Nov. 3	10·26
7	10·29
12	10·38
18	10·48
19	10·39
24	10·41
27	10·33
28	10·41
Dec. 24	10·48
29	10·44

ζ Aquilæ.	
Jan. 19	18 58 3·30
28	3·36
Feb. 5	3·34
23	3·33
July 15	3·32
24	3·40
30	3·32
Aug. 2	3·39
5	3·33
6	3·35
8	3·43
9	3·34
14	3·38
24	3·41
25	3·38
29	3·36
31	3·39
Sept. 3	3·44
9	3·35
10	3·38
17	3·27
26	3·40

ζ Aquilæ.

	h.	m.	s.
Sept. 30	18	58	3·42
Oct. 3			3·37
Nov. 28			3·33
Dec. 16			3·36
17			3·44
26			3·40

ϖ Sagittarii.

Oct. 3	19	0	14·75

⁎ D. – 3° 23′

July 24	19	7	3·49
30			3·57
Aug. 8			3·54
14			3·61
29			3·76

δ Aquilæ.

Jan. 28	19	17	25·75
Feb. 5			25·87
9			25·84
23			25·78
Mar. 1			25·86
July 16			25·82
24			25·61
30			25·81
Aug. 5			25·88
8			25·76
12			25·93
14			25·91
25			25·80
28			25·86
Sept. 7			25·86
30			25·69
Oct. 3			25·75
31			25·79

52 Sagittarii.

Sept. 7	19	26	57·76
Oct. 3			57·79

γ Aquilæ.

Jan. 6	19	38	39·11
Feb. 5			39·13
9			39·15
23			39·25
Mar. 1			39·11

γ Aquilæ.

	h.	m.	s.
Mar. 3	19	38	39·27
July 29			39·08
Aug. 8			39·10
11			39·19
12			39·08
13			39·15
21			39·14
25			39·15
28			39·14
29			39·00
Sept. 3			39·18
4			39·16
7			39·15
10			39·22
11			39·08
12			38·87
21			39·02
Oct. 3			39·00
6			39·09
7			39·16
31			39·21
Nov. 24			39·10
28			39·16
30			39·20
Dec. 9			39·36
14			39·12
16			39·15
22			39·09
24			39·08
26			39·20
29			39·18

57 Sagittarii.

Sept. 7	19	42	53·77

α Aquilæ.

Jan. 6	19	42	58·49
Feb. 5			58·43
9			58·50
23			58·60
Mar. 1			58·57
3			58·62
July 15			58·37
Aug. 2			58·50
4			58·49
12			58·43
13			58·59
21			58·53
24			58·55
28			58·48
29			58·48

α Aquilæ.

	h.	m.	s.
Sept. 4	19	42	58·57
10			58·50
11			58·60
17			58·56
21			58·45
Oct. 3			58·47
6			58·41
17			58·79
24			58·55
31			58·54
Nov. 24			58·45
28			58·49
Dec. 9			58·69
11			58·51
14			58·51
16			58·55
22			58·52
23			58·62
24			58·54
29			58·59
31			58·63

β Aquilæ.

Mar. 3	19	47	27·15
July 15			27·12
Aug. 2			27·20
4			27·16
11			27·17
12			27·10
13			27·21
21			27·18
28			27·22
Sept. 11			27·23
17			27·16
Oct. 6			27·10
19			27·40
24			27·22
31			27·09
Dec. 22			27·20

α² Capricorni.

Aug. 11	20	9	10·27
20			10·32
Sept. 1			10·39
7			10·33
9			10·44
12			10·31
24			10·37

β² Capricorni.

Aug. 11	20	12	0·92
Nov. 28			0·93

ϖ Capricorni.

	h.	m.	s.
July 15	20	18	9·19
Sept. 7			9·37

υ Capricorni.

Sept. 7	20	30	56·01
Nov. 28			56·42

α Cygni.

Jan. 4	20	35	58·84
6			58·78
8			58·74
11			58·68
17			58·79
28			58·77
29			58·74
Feb. 5			58·72
6			58·71
11			58·72
Mar. 1			58·78
16			58·91
July 28			58·73
31			58·79
Aug. 1			58·88
11			58·58
18			58·98
20			58·68
Sept. 1			58·67
2			58·63
5			58·92
7			58·75
8			58·87
9			58·81
12			58·73
24			58·71
25			58·66
26			58·70
28			58·77
30			58·66
Oct. 1			58·65
17			58·61
Nov. 5			58·95
16			58·69
Dec. 2			58·84
11			58·67
12			58·78
21			58·79
22			58·70
23			58·84

μ Aquarii.

Aug. 11	20	44	1·13
12			1·05

θ Capricorni.

	h.	m.	s.
Nov. 30	20	56	56·73

χ¹ Capricorni.

Aug. 11	20	59	23·26

61 Cygni preceding.

July 28	20	59	43·76
Aug. 28			43·74
29			43·72
31			43·77
Sept. 1			43·77
3			43·97
4			43·83
7			43·91
10			43·85
11			44·03
12			43·72

61 Cygni following.

July 28	20	59	45·28
Aug. 28			45·09
29			45·17
31			45·15
Sept. 1			45·09
3			45·34
4			45·26
7			45·11
10			45·27
11			45·23
12			45·29

ζ Cygni.

Jan. 6	21	6	7·75
8			7·71
14			7·72
20			7·70
27			7·68
29			7·76
July 28			7·70
Aug. 21			7·79
22			7·66
Sept. 1			7·72
17			7·87
18			7·72
24			7·67
25			7·59
26			7·63

ζ Cygni.	h.	m.	s.
Sept. 28	21	6	7·63
29			7·71
30			7·70
Oct. 1			7·71
2			7·70
5			7·69
7			7·50
9			7·67
Nov. 10			7·78
30			7·59
Dec. 12			7·66
18			7·74
26			7·62

29 Capricorni.			
July 16	21	6	53·11

ι Capricorni.			
Nov. 30	21	13	19·60

β Aquarii.			
Sept. 1	21	23	7·85
2			7·81
18			7·91
24			7·87
25			7·86
26			7·80
29			7·84
30			7·87
Oct. 5			7·93
7			7·87
8			7·70
9			7·77
Nov. 3			7·92

ε Capricorni.			
July 16	21	28	6·72

γ Capricorni.			
Sept. 9	21	31	13·23
Nov. 3			12·98

ε Pegasi.	h.	m.	s.
Jan. 6	21	36	19·57
17			19·67
29			19·57
Sept. 1			19·62
2			19·60
5			19·62
9			19·56
14			19·56
18			19·64
28			19·57
Oct. 1			19·56
2			19·43
6			19·75
14			19·55
Nov. 3			19·64
20			19·66
Dec. 31			19·76

δ Capricorni.			
Aug. 12	21	38	12·16
Oct. 6			12·24
Nov. 3			12·26

μ Capricorni.			
Nov. 30	21	44	33·79
Dec. 1			34·04

30 Aquarii.			
Nov. 30	21	54	51·18
Dec. 1			51·27

α Aquarii.			
Jan. 16	21	57	33·89
Sept. 2			33·94
9			33·65
14			33·88
18			33·82
29			33·81
Oct. 1			33·92
5			33·77
8			33·76
14			33·61
19			34·10
20			33·92
22			33·99
23			33·78
Nov. 3			33·88
30			33·69
Dec. 1			33·74

ι Aquarii.	h.	m.	s.
Aug. 12	21	57	47·42
13			47·18

θ Aquarii.			
Sept. 10	22	8	23·02
Nov. 4			23·40

σ Aquarii.			
Sept. 9	22	22	10·58
10			10·35
Dec. 29			10·48

η Aquarii.			
Oct. 7	22	27	8·07
8			7·91

κ Aquarii.			
Dec. 1	22	29	27·96
2			27.77
29			28·18

ζ Pegasi.			
Jan. 2	22	23	29·03
14			28·89
16			29·11
Sept. 29			29·02
Oct. 1			28·98
5			28·99
6			29·09
7			28·92
12			28·92
19			29·15
22			29·02
23			29·06
24			29·09
26			28·95
27			29·09
Nov. 4			29·07
26			29·00
Dec. 1			28·92
2			28·89
29			28·96

λ Aquarii.	h.	m.	s.
Oct. 7	22	44	15·85
8			15·51
Dec. 1			15·71

3 Piscium.			
Sept. 10	22	52	25·56

α Pegasi.			
Jan. 2	22	56	47·64
11			47·60
14			47·63
15			47·64
17			47·63
27			47·61
29			47·75
31			47·62
Feb. 6			47·62
11			47·64
26			47·70
Apr. 2			47·48
Sept. 2			47·77
17			47·62
28			47·69
Oct. 12			47·57
22			47·72
23			47·58
24			47·61
26			47·71
27			47·68
30			47·79
Nov. 2			47·68
4			47·75
5			47·54
6			47·42
10			47·67
27			47·76
Dec. 1			47·67
2			47·59
29			47·50

φ Aquarii.			
Sept. 10	23	6	1·95
11			1·86
Dec. 29			1·73

γ Piscium.	h.	m.	s.
May 24	23	8	52·23
Nov. 4			52·51
5			52·30

κ¹ Piscium.			
Oct. 8	23	18	43·67
9			43·69
Dec. 2			43·80
29			43·55

ι Piscium.			
Jan. 27	23	31	43·44
31			43·27
Sept. 13			43·41
Oct. 23			43·43
30			43·45
Nov. 4			43·34
5			43·32
6			43·42
7			43·45
10			43·43
11			43·58
14			43·33
Dec. 2			43·35

λ Piscium.			
Oct. 8	23	33	52·86
9			52·73
Dec. 2			53·01

20 Piscium.			
Sept. 12	23	39	42·94
Nov. 5			42·93
6			43·05

ω Piscium.			
Feb. 7	23	51	5·73
Sept. 12			5·71
Nov. 5			5·82

ROYAL OBSERVATORY, EDINBURGH.

EXPLANATION

OF THE

PRECEDING TRANSIT OBSERVATIONS OF 1840,

AND

ELEMENTS FOR THEIR REDUCTION.

EDINBURGH TRANSIT OBSERVATIONS FOR 1840.

Pages 1–49 contain the observations made with the Transit Instrument in the year 1840, and the calculation of the Apparent Right Ascensions.

The objects chiefly observed were the Sun, Moon, and Planets, the principal Stars for ascertaining the error and rate of the Clock and the position of the Instrument, Moon-Culminating Stars, Zodiacal Stars contained in the Catalogue of the Royal Astronomical Society, and a few small Stars observed with Comets.

Nearly the whole of these observations were made by the Assistant-Astronomer, Mr Alexander Wallace, M.A. Those which have a † annexed to them in the last column of the observations were taken by the late Professor Henderson, and were so arranged as to obviate the necessity of applying any correction for personal equation.

The Transit Instrument was occasionally reversed, as mentioned in the observations, and, between two consecutive reversings, the instrument was used in one position of the axis, which is indicated with respect to its illuminated end being east or west, in the Table of the Error of Collimation given below.

The intervals of the Wires reduced to the Equator were determined from 70 observations of transits of *α* Ursæ Minoris over all the Wires, made in the course of the year; and the distances of the Wires from their mean or middle point were found to be,

	s.	
Wire I.	+26·557	Sidereal time;
II.	+13·285	
III.	+ ·009	
IV.	−13·293	
V.	−26·557	

the Wires being numbered for observations above the Pole in that position of the instrument when the illuminated end of the axis is West. These numbers have been used in reducing the imperfect transits of this year.

In computing the reductions to the mean of the Wires for observations of Stars within 5° of the Pole, the rigorous formula,

$$\sin \text{reduction} = \sin \text{equatorial interval} \times \text{secant Declination},$$

was employed. For other objects, the formula,

$$\text{reduction} = \text{equatorial interval} \times \text{secant Declination}.$$

For the Sun and Planets, the motion in Right Ascension has been allowed for: in the case of the Moon, Bessel's method in the *Tabulæ Regiomontanæ* has been adopted.

The column entitled "Correction of Instrument," contains the corrections of the observed Transits, arising from the deviation of the Instrument from the meridian.

The column "Correction of Clock Observed," contains the corrections of the Clock obtained from the observations of the standard Stars; and that entitled "Correction of Clock Interpolated," contains the corrections of the Clock interpolated from the mean corrections deduced from the observations.

The sign +, prefixed to the correction of the Clock, denotes that the Clock is slow; the sign —, that it is fast.

The sum of the numbers in the columns, "Reduction to Mean of Wires," "Correction of Instrument," "Correction of Clock Interpolated," is the Apparent Right Ascension observed, given in the last column bearing that title.

The formula for correcting the observed transits for the deviation of the instrument from the meridian is,

$$\text{Correction} = (a \times \sin \text{Zen. dist.} + b \times \cos \text{Zen. dist.} + c \pm 0^{s}{\cdot}028 \times \cos \text{Zen. dist.}) \times \sec \text{Declination} \qquad (1)$$

a, denoting the eastern distance of the plane perpendicular to the axis of rotation from the meridian at the south horizon, or the azimuth of the instrument; b, the eastern distance of the same plane from the meridian at the zenith, or the inclination of the axis of rotation, positive when the west end is high; and c, the error of collimation of the mean of the Wires, minus $0^{s}.012$ for the diurnal aberration, positive when the line of collimation is east of the line perpendicular to the axis of rotation. a, b, and c are expressed in time, and the Zenith distance is positive when the object is south of the Zenith.

The quantity $\pm\ 0^{s}{\cdot}028$ is a correction applied to the error of collimation, and was deduced from observations of the meridian marks, as explained in the Introduction to the Fourth Volume, pp. xxii–xxv., the upper sign being used in the western position of the illuminated end of the axis, and the lower sign in the eastern. The observed effect might have arisen either from an inequality in the diameter of the two pivots, or from unequal flexure of the axis. The latter was supposed to be the real cause, as no evidence of the former was detected by careful levelling.

In practice, the following transformation of the preceding formula has been employed:

$$\text{Correction} = m + n \times \text{tangent Declination} + c \times \text{secant Declination} \quad \ldots\ldots \quad (2)$$

m and n being related to the quantities a and b by these expressions

$$m = a \times \sin \text{Latitude} + (b \pm 0^{s}{\cdot}028) \times \cos \text{Latitude} \quad \ldots\ldots \quad (3)$$

$$n = -a \times \cos \text{Latitude} + (b \pm 0^{s}{\cdot}028) \times \sin \text{Latitude} \quad \ldots\ldots \quad (4)$$

The adopted Latitude of the Observatory = 55° 57′ 23″·2 North
——— Longitude ——— $0^{h}\ 12^{m}\ 43^{s}{\cdot}0$ West
——— Geocentric Latitude ——— 55° 46′ 43″

The collimation of the Instrument was determined by measuring, with the Micrometer, whenever the weather would permit, the distance of Wire III. from the north and south meridian marks in the reversed positions of the axis.

Let S = the Eastern azimuth of the South Mark
N = ——— North ———
a = ——— instrument at South horizon
c = the error of Collimation of Wire III., Illuminated end West
s = observed distance of Wire III. from the South Mark
n = ——— North ———

$$S + \mathrm{s} - c = a$$
$$N + \mathrm{n} - c = a.$$

Although a is a fluctuating quantity, yet, when the observations of the two marks are made at the same time, it may be assumed to be invariable. Hence eliminating a

$$S + N + \mathrm{s} + \mathrm{n} = 2\,c.$$

In like manner, illuminated end east, assuming the collimation to be the same, but with opposite sign, and

s′ = Eastern distance of Wire III. from South Mark
n′ = ——— North ———

$$S + N + \mathrm{s}' + \mathrm{n}' = -\,2\,c.$$

Eliminating (S + N) from the two last equations

$$(\mathrm{s} + n) - (\mathrm{s}' + \mathrm{n}') = 4\,c.$$

The observed eastern distance of Wire III. from the marks is given in the following Table, and the column entitled "*Sum*" contains the values of (s + n) and (s′ + n′).

TABLE I.

OBSERVATIONS OF MERIDIAN MARKS.

Date.	Wire III. East of		Sum.	Illuminated End of Axis.	Date.	Wire III. East of		Sum.	Illuminated End of Axis.
	North Mark.	South Mark.				North Mark.	South Mark.		
1839.	s.	s.	s.		1840.	s.	s.	s.	
Dec. 12	−1·63	……	……	West	Jan. 3	−0·83	……	……	West
17	−1·53	……	……	……	9	−0·97	……	……	……
18	−0·87	+0·92	+0·05	…· (*a*)	13	−0·78	……	……	……
21	−0·72	……	……	……	14	−0·81	……	……	……
24	−0·67	+0·66	−0·01	……	17	−0·70	……	……	……
25	−0·66	……	……	……	18	−0·83	+0·77	−0·06	……
28	−0 95	……	……	……			Mean	−0·007	

(*a*) After this observation the Instrument was moved in azimuth.

Date.	Wire III. East of		Sum.	Illuminated End of Axis.
	North Mark.	South Mark.		
1840.	s.	s.	s.	
Jan. 18	−0·68	+0·93	+0·25	East
19	−0·59	+0·93	+0·34	......
24	−0·62	+0·97	+0·35	......
26	−0·65	+1·03	+0·38	......
Feb. 10	−0·65	+1·05	+0·40	......
17	−0·57	+0·93	+0·36	......
18	−0·63	+1·03	+0·40	......
19	−0·67	+1·07	+0·40	......
20	−0·75	+1·19	+0·44	......
		Mean	+0·369	
21	−0·99	+1·03	+0·04	West
22	−1·01	......	......	......
23	−1·08	+1·12	+0·04	......
24	−1·03	+1·05	+0·02	......
29	−1·03	......	......	......
March 2	−1·05	......	......	......
3	−1·06	......	......	......
5	−1·01	......	......	......
10	−0·85	......	......	......
11	−0·77	......	......	......
12	−0·77	......	......	......
13	−0·74	......	......	......
14	−0·69	......	......	......
16	−0·72	......	......	......
19	−0·72	......	......	......
20	−0·73	......	......	......
21	−0·85	......	......	......
22	−0·85	......	......	......
24	−0·82	......	......	......
		Mean	+0·033	
	−0·72	+1·08	+0·36	East
25	−0·69	......	......	......
26	−0·71	......	......	......
27	−0·75	......	......	......
29	−0·65	+0·97	+0·32	......
31	−0·60	......	......	......
April 1	−0·63	+1·01	+0·38	......
2	−0·67	+1·05	+0·38	......
4	−0·65	......	......	......
6	−0·56	......	......	......
8	−0·59	......	......	......
		Mean	+0·360	
May 6	−0·50	+0·51	+0·01	West
7	−0·51	+0·52	+0·01	......
8	−0·57	+0·58	+0·01	......
10	−0·62	+0·64	+0·02	......

Date.	Wire III. East of		Sum.	Illuminated End of Axis.
	North Mark.	South Mark.		
1840.	s.	s.	s.	
May 11	−0·69	+0·67	−0·02	West
13	−0·71	+0·68	−0·03	......
17	−0·59	......	......	......
18	−0·59	+0·65	+0·06	......
19	−0·68	+0·75	+0·07	......
20	−0·68	......	......	......
21	−0·64	......	......	......
23	−0·59	+0·57	−0·02	......
24	−0·49	+0·52	+0·03	......
25	−0·53	+0·59	+0·06	......
26	−0·57	+0·57	0·00	......
27	−0·59	+0·63	+0·04	......
28	−0·53	+0·51	−0·02	......
29	−0·57	+0·58	+0·01	......
30	−0·57	+0·53	−0·04	......
June 1	−0·41	......	......	......
		Mean	+0·012	
(*a*) 2	−0·62	......	......	East
3	−0·69	......	......	......
4	−0·69	+1·13	+0·44	......
5	−0·74	+1·17	+0·43	......
8	−0·63	......	......	......
10	−0·64	......	......	......
11	−0·64	......	......	......
13	−0·64	......	......	......
14	−0·67	......	......	......
15	−0·67	......	......	......
16	−0·69	......	......	......
17	−0·64	......	......	......
18	−0·64	......	......	......
19	−0·65	......	......	......
22	−0·67	......	......	......
23	−0·68	......	......	......
24	−0·67	......	......	......
25	−0·72	......	......	......
26	−0·67	......	......	......
28	−0·58	......	......	......
29	−0·63	......	......	......
30	−0·62	+1·05	+0·43	......
July 1	−0·60	......	......	......
4	−0·63	......	......	......
		Mean	+0·433	
5	−0 88	+0·89	+0·01	West
6	−0·83	+0·91	+0·08	......
7	−0·87	+0·85	−0·02	......
8	−0·86	......	......	......
9	−0·89	+0·90	+0·01	......
10	−0·86	......	......	......

(*a*) Western end of Axis moved 6″·6 in azimuth to the South.

Date.	Wire III. East of		Sum.	Illuminated End of Axis.
	North Mark.	South Mark.		
1840.	s.	s.	s.	
July 11	−0·87	......	......	West
13	−0·88	......	......	......
14	−0·93	+0·93	0·00	......
15	−0·89	+0·87	−0·02	......
16	−0·88	+0·88	0·00	......
17	−0·85	......	.....	......
19	−0·85	+0·87	+0·02	......
23	−0·81	......	......	......
24	−0·87	+0·86	−0·01	......
25	−0·85	......	......	......
27	−0·87	+0·84	−0·03	......
29	−0·83	......	......	......
(*a*) 30	−0·87	+0·85	−0·02	......
		Mean	+0·002	
30	−0·77	+0·99	+0·22	West
31	−0·77	+0·99	+0·22	......
Aug. 1	−0·80	+0·98	+0·18	......
3	−0·77	+0·95	+0·18	......
6	−0·69	+0·92	+0·23	......
8	−0·72	......	......	...
10	−0·75	+0·94	+0·19	......
		Mean	+0·203	...
	−0·73	+0·95	+0·22	East
11	−0·73	......	......	......
12	−0·79	......	......	......
14	−0·81	+1·06	+0·25	......
16	......	+1·05	......	......
18	−0·85	......	......	......
20	−0·83	+1·03	+0·20	......
21	......	+1·01	......	......
22	−0·79	......	......	......
23	−0·81	......	......	......
26	−0·83	+1·07	+0·24	......
27	−0·80	+1·05	+0·25	......
28	−0·80	......	......	......
29	−0·81	+1·01	+0·20	......
30	−0·80	......	......	......
31	−0·82	......	......	......
Sept. 1	−0·79	+1·03	+0·24	......
3	−0·83	+1·06	+0·23	......
4	−0·87	+1·05	+0·18	......
7	−0·92	......	......	......
8	−0·89	+1·14	+0·25	......
9	−0·89	+1·13	+0·24	......
10	−0·91	+1·11	+0·20	......
11	−0·99	+1·19	+0·20	......
		Mean	+0·223	

Date.	Wire III. East of		Sum.	Illuminated End of Axis.
	North Mark.	South Mark.		
1840.	s.	s.	s.	
Sept. 12	−0·98	+1·21	+0·23	West
13	−0·96	......	......	......
14	−0·97	+1·19	+0·22	......
15	−1·03	......	......	......
17	−1·05	......	......	......
20	−1·09	+1·35	+0·26	......
21	−1·11	+1·34	+0·23	......
23	−1·11	+1·35	+0·24	......
24	−1·08	......	......	......
26	−1·07	+1·29	+0·22	......
27	−1·03	+1·29	+0·26	......
28	−1·03	+1·23	+0·20	......
29	−1·01	+1·25	+0·24	......
30	−1·05	+1·29	+0·24	......
Oct. 1	−1·05	+1·29	+0·24	......
2	−1·08	......	......	......
3	−1·09	+1·32	+0·23	......
7	−1·13	......	......	......
8	−1·16	......	......	......
9	−1·13	......	......	......
11	−1·07	......	......	......
13	−1·12	+1·32	+0·20	......
14	−1·05	......	......	......
		Mean	+0·232	
16	−1·04	......	......	East
17	−1·01	......	......	......
18	−1·01	+1·24	+0·23	......
19	−1·00	+1·25	+0·25	......
20	−1·11	......	......	......
22	−1·12	......	......	......
23	−1·16	......	......	......
24	−1·17	......	......	......
26	−1·19	......	......	......
28	−1·23	+1·39	+0·16	......
30	−1·15	......	......	......
Nov. 1	−1·11	......	......	......
3	−1·05	......	......	......
6	−1·13	+1·29	+0·16	......
14	−1·20	......	......	......
17	−1·17	......	......	......
18	−1·33	......	......	......
23	−1·29	+1·48	+0·19	......
		Mean	+0·198	
29	−1·25	......	......	West
Dec. 1	−1·08	......	......	......
3	−1·21	+1·37	+0·16	......
4	−1·19	......	......	......
6	−1·12	+1·31	+0·19	......

(*a*) After this observation the Telescope was struck, and the line of collimation was thereby altered.

Date.	Wire III. East of		Sum.	Illuminated End of Axis.	Date.	Wire III. East of		Sum.	Illuminated End of Axis.
	North Mark.	South Mark.				North Mark.	South Mark.		
1840.	s.	s.	s.		1840.	s.	s.	s.	
Dec. 7	−1·09	+1·33	+0·24	West	Dec. 31	−1·37	……	……	West
9	−1·16	……	……	……	1841.				
11	−1·13	……	……	……	Jan. 1	−1·33	……	……	……
15	−1·34	……	……	……	3	−1·26	+1·48	+0·22	……
19	−1·35	+1·57	+0·22	……	5	−1·38	……	……	……
22	−1·41	……	……	……	16	……	+1·78	……	……
29	−1·45	……	……	……					
30	−1·47	+1·66	+0·19	……			Mean	+0·203	

The error of collimation of Wire III. was found to be,

	s.		s.
1839.		1840.	
Dec. 11	−0·097	July 4	−0·108
1840.		Aug. 10	−0·005
Jan. 18	−0·094	Sept. 12	+0·002
Feb. 20	−0·084	Oct. 15	+0·008
March 24	−0·082	Nov. 28	+0·001
April 27	−0·087	1841.	
June 1	−0·105	Jan. 16	+0·004

the sign here given being that which belongs to the western position of the illuminated end of the axis.

The quantities adopted are,

1840.	s.	1840.	s.
Jan. 1—Jan. 18	− 0·096	July 4—July 30	− 0·108
Jan. 18—Feb. 20	− 0·089	July 30—Aug. 10	− 0·005
Feb. 20—March 24	− 0·083	Aug. 10—Sept. 12	− 0·002
March 24—April 27	− 0·084	Sept. 12—Oct. 15	+ 0·005
April 27—June 1	− 0·096	Oct. 15—Nov. 28	+ 0·004
June 1—July 4	− 0·106	Nov. 28—Dec. 31	+ 0·002

To these quantities increased by 0s·009 for the distance of Wire III. from the mean of the Wires (the sign of the sum being changed in the eastern position of the illuminated end of the axis), there is applied −0s·012 for the diurnal aberration, and there are obtained the following values of the error of collimation of the mean of the Wires to be employed in the formula (2):

Period.	c	Illuminated End of Axis.
1840.	s.	
Jan. 1—Jan. 18	− 0·12	West.
Jan. 18—Feb. 20	+ 0·09	East.
Feb. 20—March 24	− 0·10	West.
March 24—April 27	+ 0·08	East.
April 27—June 1	− 0·12	West.

Period. 1840.	c s.	Illuminated End of Axis.
June 1—July 4	+ 0·10	East.
July 4—July 30	− 0·13	West.
July 30—Aug. 10	− 0·03	West.
Aug. 10—Sept. 12	0·00	East.
Sept. 12—Oct. 15	− 0·02	West.
Oct. 15—Nov. 28	− 0·01	East.
Nov. 28—Dec. 31	− 0·02	West.

The values of n have been determined by comparing the observed transits of α and δ Ursæ Minoris at their culminations on different sides of the Pole, and, when these were not obtained, by comparing their observed transits and those of the principal Stars distant from the Pole.

Let A = the Right Ascension of a Star near the Pole,
A' = ———————————— distant from the Pole,
D and D' = their Declinations

(for the transits *sub polo*, A + 12^h and 180° − D being used),

T and T' = the observed times of the transit over the mean of the Wires,
c = error of collimation adopted,

then
$$n = \frac{(A-A') - (T-T')}{\tan D - \tan D'} - c\,\frac{\sin\frac{1}{2}(D+D')}{\cos\frac{1}{2}(D-D')} \quad . \; . \; . \; . \; . \; . \; . \; . \; . \quad (5)$$

T and T' being corrected for the rate of the Clock.

On those days on which the Polar Stars were not observed, the values of n have been determined by formula (4), from the observations of one or both the meridian marks, if they were then observed. The azimuth of the Instrument a, which is required for the formula, is obtained thus:

Let S = the Eastern azimuth of the South mark, found = $-\ 0^s{\cdot}77$ (Vol. IV. *Introduction.*)
N = ———————— North ———————— $+\ 0{\cdot}57$
s = the observed Eastern distance of Wire III. from the South mark
n = ———————————————————— North ——
c = the adopted error of Collimation
b = error of Inclination of Axis (interpolated from Table II.),

then when the South mark has been observed; $a = S + \mathrm{s} - c = -0^s{\cdot}77 + \mathrm{s} - c$ . . . (6)

when the North mark has been observed; $a = -N - \mathrm{n} + c = -0^s{\cdot}57 - \mathrm{n} + c$ . . . . (7)

when both marks have been observed; $a = \frac{1}{2}(S - N + \mathrm{s} - \mathrm{n}) = -0^s{\cdot}67 + \frac{1}{2}(\mathrm{s} - \mathrm{n})$ . . (8)

The values of m have been determined from one of the following expressions:

$$m = n \cot \text{Lat.} + a \operatorname{cosec} \text{Lat.} \quad . \; . \; . \; . \; . \; . \; . \; . \; . \; . \; . \quad (9)$$
$$m = n \tan \text{Lat.} + b \sec \text{Lat.} \quad . \; . \; . \; . \; . \; . \; . \; . \; . \; . \; . \quad (10)$$

The former was employed on those days when the deviation from the Pole n, and the azimuth a, had been ascertained from observations of the meridian marks, given in Table I.; and the latter, on those days when n had been ascertained, but not a, b being interpolated from Table II.

In the first case, m is stated, in Table III., to have been determined from a; in the second from b.

Sometimes m has been determined from both expressions, and a mean of the results taken, in which case m is stated, in the same Table, to have been determined from a and b.

The values of m, n, and c, employed in computing the correction of the Instrument, according to the formula (2), are contained in the following Table III. The asterisks there annexed to some of the dates denote that on those days, there being no determinations of the values of n or a, means of the preceding and subsequent values of m and n have been taken and inserted in the Table.

The correction of the Instrument for the Moon has been ascertained by increasing the correction for a Star, having the same Declination as the apparent Declination of the Moon, in the proportion of the interval between the Star's transit over two Wires to the observed interval between the Moon's transit over the same Wires.

The value of b is found immediately from the spirit-level. In the Introduction to Volume IV. it has been shewn that the inclination of the axis changes gradually with the temperature of the season, and that it appears to be connected with the changes in the height of a thermometer, which shews the temperature of the surface of the rock on which the Observatory is built. By the method which is there explained, and from the corresponding observations of the inclination of the axis b, and the temperature of the rock t there given, x has been found $= 0^{s}{\cdot}0102$ from all the observations, and $\tau = 47^{\circ}{\cdot}39$, in the equation,

$$b = x\,(\tau - t)$$

by which it has been assumed that the values of b may be represented. They have been computed, therefore, from the formula,

$$b = 0^{s}{\cdot}0102 \times (47{\cdot}39 - t)$$

for those days on which the thermometer was observed, but the level not applied.

The values of b are given in the following Table II., "Inclination of Axis," under the title "West End high;" and in the last column it is indicated whether they have been determined by the level or the thermometer. For times between the dates there mentioned, the values of b are assumed to have varied as the time:

TABLE II.

INCLINATION OF AXIS.

Date.	West End high.	Thermometer.	Determined by	Date.	West End high.	Thermometer.	Determined by
1839.	s.	°		1840.	s.	°	
Dec. 31	+0·130	37·4	Therm.	June 16	−0·068	54·0	Therm.
1840.				17	−0·050	52·3	Therm.
Jan. 6	+0·147	33·0	Therm.	18	−0·047	52·0	Therm.
13	+0·057	41·8	Therm.	19	−0·059	53·2	Therm.
14	+0·093	......	Level	20	−0·049	52·2	Therm.
20	+0·111	36·5	Therm.	22	−0·052	52·5	Therm.
27	+0·147	33·0	Therm.	23	−0·028	50·1	Therm.
Feb. 3	+0·114	36·2	Therm.	24	−0·014	48·7	Therm.
11	+0·102	37·4	Therm.	25	−0·027	50·0	Therm.
12	+0·059	......	Level	26	−0·045	51·8	Therm.
17	+0·075	40·0	Therm.	27	−0·076	54·8	Therm.
24	+0·143	33·4	Therm.	28	−0·086	55·8	Therm.
March 2	+0·149	32·8	Therm.	29	−0·081	55·3	Therm.
9	+0·086	38·9	Therm.	30	−0·078	55·0	Therm.
10	+0·096	......	Level	July 1	−0·096	51·6	Level
16	+0·071	40·4	Therm.	2	−0·057	53·0	Therm.
23	+0·110	36·6	Therm.	4	−0·053	52·6	Therm.
30	+0·050	42·5	Therm.	6	−0·044	51·7	Therm.
April 1	+0·100	......	Level	13	−0·049	52·2	Therm.
6	+0·063	41·2	Therm.	14	−0·053	52·6	Therm.
13	+0·012	46·2	Therm.	15	−0·088	56·0	Therm.
20	+0·011	46·3	Therm.	16	−0·076	54·8	Therm.
27	−0·061	53·4	Level	17	−0·102	52·4	Level
May 5	+0·012	46·2	Therm.	18	−0·072	54·4	Therm.
11	+0·077	40·0	Level	20	−0·085	55·7	Therm.
12	+0·040	42·5	Therm.	21	−0·066	53·8	Therm.
13	+0·036	43·8	Therm.	22	−0·061	53·4	Therm.
14	+0·020	45·4	Therm.	23	−0·052	52·5	Therm.
15	+0·017	45·7	Therm.	25	−0·070	54·2	Therm.
16	+0·018	45·6	Therm.	27	−0·102	57·4	Therm.
17	+0·024	45·0	Therm.	28	−0·091	56·3	Therm.
18	+0·048	42·7	Therm.	29	−0·069	54·1	Therm.
19	+0·047	42·8	Therm.	30	−0·080	55·2	Therm.
23	−0·035	50·8	Therm.	31	−0·066	53·8	Therm.
25	−0·015	48·8	Therm.	Aug. 1	−0·088	56·0	Therm.
27	−0·015	48·8	Therm.	3	−0·103	57·5	Therm.
28	−0·026	49·9	Therm.	4	−0·114	58·5	Therm.
30	−0·023	49·6	Therm.	5	−0·096	56·8	Therm.
June 1	−0·074	54·6	Therm.	6	−0·103	57·5	Therm.
2	−0·042	51·5	Therm.	7	−0·117	58·8	Therm.
3	−0·033	50·6	Therm.	8	−0·141	61·2	Therm.
4	−0·074	54·6	Therm.	10	−0·176	60·3	Level
6	+0·023	......	Level	11	−0·108	58·0	Therm.
8	−0·070	54·2	Therm.	12	−0·092	56·4	Therm.
9	−0·081	55·3	Therm.	14	−0·086	55·8	Therm.
10	−0·073	54·5	Therm.	18	−0·066	53·8	Therm.
11	−0·062	53·5	Therm.	19	−0·088	56·0	Therm.
12	−0·051	52·4	Therm.	20	−0·117	58·8	Therm.
13	−0·049	52·2	Therm.	21	−0·139	61·0	Therm.
14	−0·056	52·9	Therm.	24	−0·084	55·6	Therm.
15	−0·055	52·8	Therm.	26	−0·073	54·5	Therm.

Date.	West End high.	Thermo-meter.	Determined by	Date.	West End high.	Thermo-meter.	Determined by
1840.	s.	°		1840.	s.	°	
Aug. 27	−0·093	58·6	Level	Oct. 31	+0·029	44·5	Therm.
29	−0·122	59·3	Therm.	Nov. 2	+0·020	45·4	Therm.
31	−0·071	54·3	Therm.	4	+0·024	45·0	Therm.
Sept. 1	−0·078	55·0	Therm.	5	+0·036	43·8	Therm.
2	−0·086	55·8	Therm.	7	+0·037	43·7	Therm.
3	−0·058	53·1	Therm.	9	+0·053	42·2	Therm.
5	−0·051	52·4	Therm.	10	+0·055	42·0	Therm.
7	−0·076	54·8	Therm.	12	+0·099	40·4	Level
8	−0·059	53·2	Therm.	13	+0·081	39·4	Therm.
9	−0·084	55·6	Therm.	14	+0·075	40·0	Therm.
10	−0·056	52·0	Level	16	+0·075	40·0	Therm.
11	−0·035	50·8	Therm.	17	+0·085	39·0	Therm.
12	−0·049	52·2	Therm.	18	+0·120	35·6	Therm.
14	−0·016	48·9	Therm.	19	+0·129	34·7	Therm.
15	−0·015	48·8	Therm.	20	+0·101	37·5	Therm.
16	+0·008	46·6	Therm.	22	+0·112	36·4	Therm.
17	−0·001	47·5	Therm.	23	+0·043	43·2	Therm.
18	−0·006	48·0	Therm.	24	+0·055	42·0	Therm.
19	−0·012	48·5	Therm.	25	+0·043	43·2	Therm.
21	−0·019	49·2	Therm.	27	+0·113	36·3	Therm.
22	+0·014	46·0	Therm.	28	+0·106	37·0	Therm.
23	−0·003	47·7	Therm.	30	+0·014	46·0	Therm.
24	−0·007	48·1	Therm.	Dec. 1	+0·050	42·5	Therm.
28	−0·057	53·0	Therm.	2	+0·125	39·2	Level
30	+0·006	46·8	Therm.	3	+0·090	38·5	Therm.
Oct. 1	−0·010	48·4	Therm.	4	+0·075	40·0	Therm.
2	+0·039	47·5	Level	5	+0·045	43·0	Therm.
3	+0·026	44·8	Therm.	7	+0·055	42·0	Therm.
5	+0·006	46·8	Therm.	8	+0·075	40·0	Therm.
7	+0·018	45·6	Therm.	9	+0·085	39·0	Therm.
8	+0·010	46·4	Therm.	10	+0·068	40·7	Therm.
9	−0·002	47·6	Therm.	11	+0·087	38·8	Therm.
10	−0·004	47·8	Therm.	12	+0·116	36·4	Therm.
12	+0·013	46·1	Therm.	14	+0·136	34·0	Therm.
13	+0·004	47·0	Therm.	15	+0·147	33·0	Therm.
14	−0·002	47·6	Therm.	16	+0·152	32·5	Therm.
15	+0·008	46·6	Therm.	17	+0·106	37·0	Therm.
16	−0·011	50·6	Level	18	+0·111	36·5	Therm.
17	−0·004	47·8	Therm.	21	+0·134	34·2	Therm.
19	+0·007	46·7	Therm.	22	+0·134	34·2	Therm.
20	+0·019	45·5	Therm.	23	+0·154	32·3	Therm.
21	+0·014	46·0	Therm.	24	+0·167	31·0	Therm.
22	+0·014	46·0	Therm.	25	+0·147	33·0	Therm.
23	+0·009	46·5	Therm.	26	+0·140	33·6	Therm.
24	+0·045	43·0	Therm.	28	+0·152	32·5	Therm.
26	+0·064	41·1	Therm.	29	+0·136	34·0	Therm.
27	+0·050	42·5	Therm.	30	+0·138	33·8	Therm.
28	+0·070	40·5	Therm.	31	+0·112	36·4	Therm.
30	+0·029	44·5	Therm.				

TABLE III.

VALUES OF THE QUANTITIES m, n, AND c, ADOPTED IN THE REDUCTIONS.

Date.	m	n	c	m determined from	Date.	m	n	c	m determined from
1840.	s.	s.	s.		1840.	s.	s.	s.	
January 2*	+0·24	+0·02	−0·12	...	March 11	+0·16	+0·04	−0·10	*a* & *b*
3	+0·22	+0·05	−0·12	...	11, 12	+0·11	−0·04	−0·10	*a*
3, 4	+0·26	+0·03	−0·12	...	13	+0·09	−0·01	−0·10	*a*
5, 6	+0·12	+0·13	−0·12	...	14	+0·08	+0·07	−0·10	*a* & *b*
7	+0·35	−0·04	−0·12	...	15*	+0·09	+0·06	−0·10	...
7, 8	+0·30	−0·02	−0·12	...	16	+0·10	+0·05	−0·10	*a* & *b*
9	+0·32	−0·05	−0·12	...	16, 17	+0·12	+0·04	−0·10	*b*
10*	+0·23	0·00	−0·12	...	18	+0·15	+0·03	−0·10	*b*
10, 11	+0·14	+0·04	−0·12	...	19	+0·13	+0·09	−0·10	*a*
12	+0·16	+0·01	−0·12	...	20	+0·10	+0·03	−0·10	*a*
13, 14	+0·05	+0·11	−0·12	...	20, 21, 22	+0·21	−0·02	−0·10	*a*
15	+0·06	+0·11	−0·12	...	25, 26	+0·25	−0·03	+0·08	*a*
16	+0·09	+0·09	−0·12	...	27	+0·24	−0·10	+0·08	*a* & *b*
16, 17	+0·08	+0·10	−0·12	...	28	+0·13	−0·04	+0·08	*b*
18	+0·12	+0·01	+0·09	...	31	+0·15	+0·02	+0·08	*a*
19	+0·12	+0·02	+0·09	...	April 2— 10	+0·16	−0·03	+0·08	...
19, 20	+0·14	+0·01	+0·09	...	13— 26	−0·22	+0·10	+0·08	...
20, 21	+0·12	+0·03	+0·09	...	27—May 2	−0·31	+0·21	−0·12	...
22	+0·18	−0·01	+0·09	...	May 17— 18	−0·04	+0·15	−0·12	...
24	+0·10	+0·05	+0·09	...	19— 22	+0·04	+0·02	−0·12	...
25	+0·15	+0·03	+0·09	...	23—June 1	−0·12	+0·11	−0·12	...
26, 27	+0·23	−0·01	+0·09	...	June 1—June 2	−0·26	+0·14	+0·10	...
28, 29	+0·26	−0·04	+0·09	...	June 2—July 4	+0·10	−0·11	+0·10	...
29, 30	+0·28	−0·06	+0·09	...	July 4— 30	+0·13	−0·13	−0·13	...
31	+0·28	−0·07	+0·09	...	30—Aug. 10	+0·10	−0·17	−0·03	...
February 3	+0·17	−0·01	+0·09	*b*	Aug. 10—Sept. 12	+0·13	−0·20	0·00	...
4	+0·24	−0·06	+0·09	*b*	Sept. 12—Oct. 15	+0·42	−0·25	−0·02	...
5, 6	+0·12	+0·02	+0·09	*b*	Oct. 15—Nov. 17	+0·44	−0·27	−0·01	...
6, 7	+0·13	+0·01	+0·09	*b*	Nov. 18— 20	+0·67	−0·35	−0·01	...
8	+0·11	+0·02	+0·09	*b*	23— 28	+0·56	−0·25	−0·01	...
9, 10	+0·22	+0·02	+0·09	*a*	28	+0·68	−0·30	−0·02	*b*
10, 11	+0·15	−0·01	+0·09	*b*	30	+0·50	−0·13	−0·02	*b*
11, 12	+0·03	+0·02	+0·09	*b*	December 1	+0·50	−0·13	−0·02	*a*
13	−0·01	+0·05	+0·09	*b*	2	+0·56	−0·22	−0·02	*b*
14*	+0·01	+0·04	+0·09	...	6	+0·50	−0·24	−0·02	*a*
15	+0·03	+0·03	+0·09	*b*	7	+0·49	−0·24	−0·02	*a*
18	+0·17	−0·02	+0·09	*a*	9	+0·56	−0·17	−0·02	*a*
20	−0·06	+0·19	−0·10	*b*	11	+0·42	−0·33	−0·02	*a*
22	+0·37	−0·07	−0·10	...	15	+0·71	−0·27	−0·02	*a*
23, 24	+0·40	−0·07	−0·10	*a* & *b*	17	+0·76	−0·35	−0·02	*b*
25	+0·38	−0·05	−0·10	*b*	18	+0·78	−0·36	−0·02	*b*
25, 26	+0·41	−0·07	−0·10	*b*	19	+0·74	−0·32	−0·02	*a*
26, 27	+0·34	−0·02	−0·10	*b*	22	+0·74	−0·36	−0·02	*a*
29	+0·38	−0·10	−0·10	*a*		+0·71	−0·40	−0·02	*a*
March 1, 2	+0·43	−0·09	−0·10	*a* & *b*	23	+0·89	−0·38	−0·02	*b*
3	+0·42	−0·09	−0·10	*a* & *b*	24	+0·94	−0·40	−0·02	*b*
3, 4	+0·43	−0·10	−0·10	*b*	26	+0·83	−0·36	−0·02	*b*
5	+0·39	−0·05	−0·10	*a*	28, 29	+0·85	−0·36	−0·02	*b*
6	+0·37	−0·08	−0·10	*b*	29	+0·97	−0·36	−0·02	*a*
7	+0·28	−0·03	−0·10	*b*	30	+0·82	−0·38	−0·02	*a*
8	+0·33	−0·08	−0·10	*b*	31	+0·73	−0·30	−0·02	*a*
9	+0·31	−0·08	−0·10	*b*		+0.69	−0·36	−0·02	*a*
10	+0·23	0·00	−0·10	*a* & *b*					

For computing the corrections of the Clock, and the values of n, the following Table of the Mean Right Ascensions of the principal Stars for January 1. 1840 was employed, derived from the observations at Greenwich, Cambridge, and Edinburgh, in 1839.

STAR.	Mean Right Ascension, 1840·0.			Difference from Nautical Almanac.
	h.	m.	s.	s.
α Andromedæ	0	0	7·74	+ 0·02
γ Pegasi	0	5	0·19	− 0·05
β Ceti	0	35	33·30	+ 0·02
θ¹ Ceti	1	16	1·61	− 0·04
α Arietis	1	58	10·02	+ 0·08
γ Ceti	2	35	0·92	− 0·08
α Ceti	2	53	55·30	− 0·04
η Tauri	3	37	59·05	− 0·08
γ¹ Eridani	3	50	33·97	− 0·04
α Tauri	4	26	44·75	− 0·02
α Aurigæ	5	4	52·77	0·00
β Orionis	5	6	51·05	− 0·04
β Tauri	5	16	10·90	− 0·06
δ Orionis	5	23	50·04	− 0·06
ε Orionis	5	28	5·79	− 0·07
α Orionis	5	46	30·66	− 0·05
μ Geminorum	6	13	16·82	0·00
α Canis Majoris	6	38	5·91	− 0·01
δ Geminorum	7	10	33·69	− 0·14
α Geminorum following	7	24	22·83	− 0·16
α Canis Minoris	7	30	55·28	− 0·07
β Geminorum	7	35	30·93	− 0·14
ε Hydræ	8	38	17·88	− 0·14
α Hydræ	9	19	43·43	− 0·14
ε Leonis	9	36	45·42	− 0·11
α Leonis	9	59	50·63	− 0·17
δ Leonis	11	5	35·42	0·00
δ Hydræ and Crateris	11	11	20·68	− 0·22
β Leonis	11	40	53·60	− 0·10
β Corvi	12	25	59·62	− 0·08
12 Canum Venaticorum	12	48	31·97	− 0·11
α Virginis	13	16	46·30	− 0·06
η Bootis	13	47	3·95	− 0·06
α Bootis	14	8	21·92	− 0·04
ε Bootis	14	37	59·93	− 0·07
α² Libræ	14	42	2·25	− 0·05
β Libræ	15	8	24·25	− 0·03
α Coronæ Borealis	15	27	54·88	+ 0·01
α Serpentis	15	36	23·45	+ 0·02
β¹ Scorpii	15	56	8·52	− 0·06
δ Ophiuchi	16	5	57·96	− 0·07
α Scorpii	16	19	36·45	− 0·04

STAR.	Mean Right Ascension, 1840·0.			Difference from Nautical Almanac.
	h.	m.	s.	s.
α Herculis	17	7	21·20	− 0·10
α Ophiuchi	17	27	30·54	− 0·02
α Lyræ	18	31	31·26	− 0·04
β Lyræ	18	44	10·38	− 0·06
ζ Aquilæ	18	58	3·35	− 0·03
δ Aquilæ	19	17	25·80	0·00
γ Aquilæ	19	38	39·13	0·00
α Aquilæ	19	42	58·53	− 0·03
β Aquilæ	19	47	27·19	− 0·03
α^2 Capricorni	20	9	10·32	+ 0·02
α Cygni	20	35	58·69	− 0·11
ζ Cygni	21	6	7·75	− 0·08
β Aquarii	21	23	7·89	− 0·03
ε Pegasi	21	36	19·62	− 0·10
α Aquarii	21	57	33·85	− 0·01
ζ Pegasi	22	33	28·98	− 0·02
α Pegasi	22	56	47·67	− 0·08
ι Piscium	23	31	43·39	+ 0·13
α Ursæ Minoris	1	2	10·73	+ 0·05
δ Ursæ Minoris	18	23	55·60	− 0·86

The mean difference of the Right Ascensions of the Stars, employed for determining the correction of the Clock, from the Right Ascensions of the Nautical Almanac, is − 0^{s}·06.

The mean Right Ascensions are converted into apparent by the application of the reductions of mean to apparent places taken from the Nautical Almanac. The correction of the Clock is determined from the observed transits of the Stars in the foregoing Table (except α and δ *Ursæ Minoris*), the correction of Instrument being previously applied, compared with their apparent Right Ascensions.

The corrections of the Clock thus determined are contained in the column entitled Correction of Clock observed. When (as is generally the case) several Stars have been observed for the correction of the Clock within the same period of 24 hours, they are comprised in one group, and the mean of the corrections of the Clock, given by observations, is held to be the correction corresponding to the mean of the times. These means, and the corrections obtained from single Stars when only one Star has been observed, with the corresponding times, are contained in Table IV. For intermediate times, the corrections are deduced from those immediately preceding and following, by simple interpolation, and are entered in the column of the observations bearing the title Correction of Clock interpolated. For the more ready calculation of the interpolated corrections of the Clock, its rate, or *r*, is given in the same Table; and it is assumed to be the variation in 24 hours of the Clock's correction during the interval between the date to which it belongs and the one next following.

TABLE IV.

Mean Correction and Daily Rate of the Clock, adopted in the Reductions.

Date.	Time by Clock.	Correc- tion.	Daily Rate, or *r*.	No. of Stars.	Date.	Time by Clock.	Correc- tion.	Daily Rate, or *r*.	No. of Stars.
1840.	*h.* *m.*	*s.*	*s.*		1840.	*h.* *m.*	*s.*	*s.*	
Jan. 2	22 44	+36·88	+0·51	2	Mar. 1, 2	0 51	+51·24	+0·20	9
3	3 58	+37·50	+0·46	5	3	17 16	+51·58	+0·36	4
4	2 16	+37·93	+0·47	5	4	3 45	+51·74	+0·21	5
5, 6	19 40	+38·74	+0·53	8	5	3 20	+51·95	+0·21	5
7	3 39	+39·45	+0·31	5	6	3 45	+52·16	+0·26	5
8	20 50	+39·67	+0·64	2	7	6 11	+52·45	+0·04	4
9	22 56	+40·26	+0·74	1	8	3 20	+52·49	+0·30	3
10	5 16	+41·20	+0·38	1	9	3 19	+52·79	+0·39	5
11	20 41	+41·44	+0·53	3	10	5 4	+53·21	+0·06	1
12	1 36	+42·08	+0·38	2	11	5 24	+53·27	+0·28	5
13, 14	23 1	+42·81	+0·56	7	12	6 43	+53·57	+0·22	6
15	3 7	+43 44	+0·19	5	13	8 8	+53·78	−0·06	5
16	2 5	+43·62	+0·31	5	14	6 22	+53·73	−0·10	6
17	2 46	+43·94	+0·20	7	15	7 30	+53·62	+0·39	3
18	6 10	+44·17	+0·12	5	16	13 20	+54·10	+0·06	4
19	8 58	+44·31	+0·43	2	17	6 55	+54·14	+0·06	5
20	20 46	+44·52	+0·23	5	18	6 28	+54·20	+0·23	6
20, 21	1 35	+44·80	+0·19	7	19	9 43	+54·46	+0·06	5
22	3 49	+45·01	+0·26	5	20	6 24	+54·51	+0·14	5
24	3 3	+45·53	−0·03	5	21	7 25	+54·66	+0·07	2
25	3 34	+45·50	+0·02	5	25	18 37	+54·99	+0·18	2
26, 27	21 37	+45·54	+0·10	7	28	4 15	+55·43	−0·06	5
28, 29	21 57	+45·75	+0·37	8	31	5 35	+55·25	−0·22	5
30	2 7	+46·18	+0·14	5					
31	2 7	+46·32	+0·16	5	April 2	9 28	+54·78	+0·16	2
					3	3 26	+54·90	−0·04	7
Feb. 3	4 10	+46·81	−0·08	5	4	6 37	+54·85	−0·18	5
4	5 55	+46·72	+0·17	4	6	5 3	+54·50	−0·28	5
5, 6	23 20	+47·01	+0·03	11	7	6 12	+54·20	−0·15	1
7	2 2	+47·04	−0·08	6	9	8 37	+53·88	−0·19	1
8	2 44	+46·96	+0·10	5	10	9 45	+53·68	−0·11	5
9, 10	0 10	+47·14	+0·27	8	13	6 31	+53·36	−0·17	2
11	2 42	+47·44	+0·36	5	14	4 58	+53·20	−0·36	5
12	3 59	+47·82	+0·18	5	15	8 2	+52·79	−0·33	6
13	5 22	+48·01	+0·02	6	16	10 27	+52·43	−0·41	5
14	7 30	+48·03	+0·17	3	17	10 14	+52·02	−0·59	5
15	5 42	+48·19	+0·32	6	18	9 7	+51·46	−0·70	5
20	7 21	+49·79	−0·02	3	20	11 56	+49·98	−0·80	5
22	9 48	+49·74	+0·03	2	21	13 24	+49·12	−0·75	5
23, 24	0 52	+49·79	+0·26	11	22	14 29	+48·34	−0·45	3
25	5 20	+50·10	+0·33	4	23	10 15	+47·97	−0·40	5
26	0 1	+50·36	+0·24	7	24	7 10	+47·62	−0·40	5
26, 27	23 39	+50·60	+0·22	8	25	9 45	+47·18	−0·22	5
29	5 50	+51·09	+0·08	5	27	8 42	+46·76	−0·37	5

Date.	Time by Clock.	Correction.	Daily Rate, or r.	No. of Stars.
1840.	h. m.	s.	s.	
April 28	11 2	+46·35	−0·44	5
29	12 13	+45·89	−0·32	5
30	5 40	+45·66	−0·37	4
May 1	8 47	+45·24	−0·26	5
2	8 27	+44·98	−0·30	6
17	7 16	+40·67	......	4
	14 8	+40·36	−0·28	1
18	14 6	+40·08	−0·06	5
19	15 27	+40·01	−0·08	1
20	11 57	+39·94	−0·06	6
21	9 45	+39·89	+0·08	5
22	8 14	+39·97	+0·12	4
23	13 28	+40·12	−0·05	2
25	10 33	+40·03	−0·14	5
26	9 44	+39·90	−0·15	5
27	5 4	+39·78	......	1
28	13 34	+39·76	......	5
29	13 18	+39·75	+0·18	5
30	14 27	+39·94	......	5
June 1	12 33	+40·00	......	3
2	12 43	+39·98	−0·08	6
3	11 7	+39·90	−0·08	5
4	7 34	+39·83	......	1
7	12 52	+39·72	−0·19	4
8	14 16	+39·52	−0·14	5
10	14 15	+39·25	−0·24	5
13	13 30	+38·55	−0·08	6
14	15 18	+38·36	−0·20	4
16	15 50	+37·96	−0·38	5
17	13 26	+37·62	−0·35	5
18	14 2	+37·26	−0·29	3
19	14 1	+36·97	−0·28	5
20	12 58	+36·70	−0·25	5
22	12 48	+36·20	−0·34	4
23	16 24	+35·81	−0·26	5
25	13 28	+35·32	−0·26	2
28	17 42	+34·50	−0·12	3
30	15 12	+34·28	−0·42	5
July 1	13 51	+33·89	−0·42	5
6	18 38	+31·71	−0·61	2
7	14 30	+31·21	−0·47	5
9	15 58	+30·24	−0·52	5
10	15 47	+29·73	−0·55	3
13	18 38	+28·01	−0·43	2
15	18 52	+27·15	−0·52	5
16	17 0	+26·67	−0·58	5
17	15 19	+26·13	−0·66	5
20	16 6	+24·12	−0·64	1
24	18 31	+21·49	−0·60	5
25	17 17	+20·92	......	2
1840.	h. m.	s.	s.	
July 27	11 51	+20·05	−0·72	3
28	18 19	+19·13	−0·82	3
29	18 17	+18·31	−0·64	5
30	16 37	+17·71	−0·73	5
31	2 4	+16·70	−0·72	2
Aug. 1	17 26	+16·24	−0·69	5
2	17 49	+15·54	−0·90	4
3	17 57	+14·64	−0·84	4
4	17 4	+13·43	......	5
5	18 19	+12·95	−0·78	5
6	17 13	+12·21	−0·82	5
8	18 49	+10·52	......	5
9	18 25	+ 9·30	−1·16	4
11	17 27	+ 7·04	−1·70	6
12	19 26	+ 5·20	−1·37	5
13	19 2	+ 3·85	−1·22	5
14	17 25	+ 2·71	−1·06	5
15	16 52	+ 1·68	−1·27	4
17	18 44	− 0·96	−0·85	1
18	16 46 (*a*)	− 1·74	......	4
19	14 8	− 2·20	−0·60	1
20	20 22	− 2·96	−0·67	2
21	20 4	− 3·62	−0·21	4
22	14 5	− 3·78	−0·48	6
24	16 45	− 4·79	−0·67	5
25	18 49	− 5·51	−0·65	5
26	17 13 (*a*)	− 6·12	......	4
28	19 26	− 6·66	−0·06	5
29	18 8	− 6·72	−0·19	6
30	14 18	− 6·29	......	4
31	15 47	− 7·08	−0·19	5
Sept. 1	20 58	− 7·31	−0·38	5
2	21 42	− 7·70	−0·05	5
3	17 38	− 7·74	−0·42	5
4	18 32	− 8·17	−0·52	5
5	19 7	− 8·70	−0·21	5
7	18 5	− 9·11	−0·38	6
8	18 29	− 9·50	−0·12	4
9	20 40	− 9·63	−0·49	5
10	18 15	−10·07	−0·25	5
11	17 35	−10·31	−0·49	5
12	18 0	−10·81	−0·23	5
13	23 52	−11·10	−0·66	3
14	20 46	−11·68	−0·56	3
15	13 58	−12·08	......	2
17	20 30	−13·14	+0·02	5
18	21 31	−13·12	−0·36	4
19	15 50	−13·39	−0·03	3
20, 21	15 37	−13·45	−0·36	5
23	14 11	−14·16	−0·12	3
24	19 44	−14·31	0·00	5

(*a*) Rate altered.

Date.	Time by Clock.	Correction.	Daily Rate, or r.	No. of Stars.	Date.	Time by Clock.	Correction.	Daily Rate, or r.	No. of Stars.
1840.	h. m.	s.	s.		1840.	h. m.	s.	s.	
Sept. 25	18 22	−14·31	+0·06	5	Nov. 16	20 36	−22·22	−0·50	1
26	20 9	−14·24	−0·10	5	16	13 48	−22·58	−0·58	3
28	21 34	−14·45	−1·06	4	17	12 47	−23·14	……	3
29	21 7	−15·50	−1·51	5	18	22 10	−24·00	−0·63	3
30	20 1	−16·94	−0·38	6	19	18 55	−24·55	−0·52	8
					20	18 59	−25·07	−0·54	4
Oct. 1	20 20	−17·32	−0·22	6	23	4 26	−26·91	−0·60	5
2	18 49	−17·53	−0·34	5	24	20 2	−27·30	−0·65	5
3	19 17	−17·88	−0·24	5	25	2 47	−28·13	−0·68	4
5	20 14	−18·36	−0·15	5	26	1 20	−28·77	−0·76	5
6	20 40	−18·51	−0·23	5	27	23 31	−29·47	−0·71	5
7	20 42	−18·74	−0·36	5	28	17 8	−29·99	……	1
8	18 27	−19·07	−0·14	5	28	19 17	−30·10	−0·76	4
9	18 10	−19·21	+0·02	5	30	19 28	−31·29	−0·59	5
10	22 57	−19·18	……	1					
11	1 17	−19·17	……	3	Dec. 1	20 25	−32·32	−0·99	5
12	18 37	−19·17	+0·24	5	2	23 8	−33·45	−1·02	5
13	19 15	−18·92	+0·16	5	5	3 10	−36·43	−0·94	3
14	19 16	−18·76	+0·03	5	6	1 59	−37·50	−1·13	1
17	18 2	−18·67	+0·23	3	8	2 47	−40·41	−1·20	4
18, 19	14 26	−18·24	+0·20	10	9	1 15	−41·79	−1·47	5
20	17 7	−18·02	+0·27	5	10	5 59	−43·21	−1·18	4
21, 22	19 3	−17·46	+0·20	6	11	23 38	−44·12	−1·24	5
23	23 1	−17·22	+0·16	5	12	20 52	−45·26	−1·28	2
24	20 8	−17·08	+0·02	5	13	15 29	−47·92	……	1
26	22 46	−17·04	−0·07	2	14	19 18	−48·15	−1·49	3
27	19 16	−17·10	−0·11	4	15	3 45	−49·77	−1·20	5
28	22 53	−17·22	−0·08	4	16	19 14	−50·86	−1·68	4
29, 30	17 56	−17·36	+0·09	6	17	7 30	−53·01	−1·42	6
31	19 37	−17·26	……	4	18	22 44	−54·20	−1·87	5
					19	4 9	−56·27	−1·68	3
Nov. 2	0 42	−17·26	+0·10	4	21	0 4	−59·58	−1·81	5
3	20 10	−17·18	−0·22	5	22	19 40 (*a*)	−61·23	−2·03	5
4	23 26	−17·43	−0·30	5	22	2 59	− 1·60	……	5
5	23 2	−17·73	−0·11	5	23	23 49	− 1·49	+0·13	5
6	23 31	−17·84	−0·14	3	24	22 49	− 1·18	+0·32	5
7	20 59	−17·96	−0·40	6	26	19 54	− 0·42	+0·40	3
10	23 51	−19·19	−0·34	5	28	5 24	+ 0·81	+0·51	5
11	22 44	−19·52	−0·68	5	29	20 43	+ 0·89	+0·12	5
12	19 20	−20·10	……	4	30	4 54	+ 1·76	+0·65	5
14	0 34	−20·89	−0·72	5	31	3 48	+ 2·02	+0·27	6

(*a*) Rate altered.

The observed Apparent Right Ascensions of the Stars, contained in the last column, are reduced to Mean Right Ascensions at the beginning of 1840; the values of precession, aberration, and proper motion being assumed, as in the Nautical Almanac and Astronomical Society's Catalogue. The individual results for each Star are contained in pp. 52–59; but, when the correction of the Clock has been obtained from the observation of one Star only, the Mean Right Ascension of that Star has not been entered, as it would reproduce the Right Ascension assumed for determining the Clock Correction. For a similar reason, when the elements for the correction of the Instrument have been deduced from observations of one of the two Stars, α and δ Ursæ Minoris (the observations above and below the Pole being considered to be of separate Stars), the same rule has been followed.

ROYAL OBSERVATORY, EDINBURGH.

OBSERVATIONS

MADE WITH

THE MURAL CIRCLE,

AND COMPUTATIONS OF

APPARENT DECLINATION.

1840.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		"	"	"	° ′ "	"	°	In.	°	′ "	"	"	° ′ "
Jan. 1	(a)	......	......	......	....	......	......	......	......	....	......	......	....
Jan. 2	(b) ζ Pegasi	15·0	19·7	−0·5	346 1 16·8	− 0·1	44·5	29·03	41·8	+0 58·9	9·7	9·7	+ 9 59 54·1
	(b) β Pegasi	30·9	35·5	−0·1	328 48 33·2	......	......	......	......	+0 31·3	......	......	+27 13 5·2
Jan. 6	α Aquilæ	8·8	13·2	−0·5	347 34 10·5	......	32·3	29·86	36·9	+1 5·6	11·5	10·6	+ 8 26 54·5
	ε Pegasi	29·2	32·4	−0·5	346 52 30·2	......	......	......	......	+1 4·0	12·4	......	+ 9 8 36·4
	ζ Pegasi	14·0	19·2	−0·5	346 1 16·0	......	31·8	......	......	+1 2·3	12·0	......	+ 9 59 52·3
	(c) γ Cephei R.	42·0	42·0	+0·1	140 51 42·0	− 1·7	......	......	......	+0 22·9	6·6	......	+76 44 39·0
	γ Ursæ Majoris S.P.	32·3	36·4	+0·1	230 39 34·5	......	31·9	29·89	36·9	−2 39·3	10·5	......	+54 34 44·6
Jan. 7	α Tauri	16·1	20·0	−0·4	339 50 17·6	......	34·2	29·67	35·5	+0 49·5	10·1	9·9	+16 11 2·8
	α Aurigæ R.	26·0	24·0	+0·5	109 57 25·4	......	......	......	......	−0 10·6	9·5	......	+45 49 51·3
	γ Orionis	56·8	61·0	−0·5	349 48 58·4	......	......	......	......	+1 10·2	......	......	+ 6 12 1·3
	δ Orionis	58·9	63·3	−0·6	356 26 0·5	......	34·0	29·66	35·9	+1 29·3	11·5	......	− 0 25 19·9
	δ Ursæ Minoris S.P.	10·9	17·0	+0·2	262 38 14·2	......	......	......	......	−0 45·6	9·6	......	+86 35 18·7
	(d) 51 (Hev.) Cephei	46·7	51·0	+0·2	268 46 49·0	+ 0·3	33·8	29·67	35·9	−0 36·2	9·2	......	+87 15 56·8
Jan. 8	α Cygni	14·0	19·8	+0·3	311 19 17·2	......	40·7	29·71	40·9	+0 11·7	9·7	......	+44 42 41·0
Jan. 11	Sun South L.	33·0	36·5	−0·3	18 8 34·5	......	46·8	29·81	44·3	+4 29·1	......	10·0	−22 10 53·6
	β Pegasi	30·9	35·9	−0·1	328 48 33·4	......	46·0	29·82	45·0	+0 32·0	......	......	+27 13 4·6
	γ Cephei	47·0	53·8	+0·4	279 17 50·9	......	......	......	......	−0 22·2	11·3	......	+76 44 41·3
Jan. 12	(e) Moon South L.	39·6	45·2	−0·4	342 44 42·0	+ 0·0	47·1	29·56	45·6	+0 53·2	......	......	+13 16 34·8
	β Arietis	51·2	57·5	−0·3	335 59 54·1	......	......	......	......	+0 41·8	......	......	+20 1 34·1
	α Arietis	7·9	12·5	−0·2	333 19 10·0	......	......	......	......	+0 37·8	8·7	......	+22 42 22·2
Jan. 14	ζ Cygni	14·6	20·3	0·0	326 27 17·4	......	47·3	29·27	47·0	+0 28·3	9·7	9·8	+29 34 24·1
	α Cephei	35·4	41·0	+0·5	294 7 38·8	......	......	......	......	−0 6·0	10·1	......	+61 54 37·0
	β Cephei	40·7	49·2	+0·4	286 10 45·3	......	......	......	......	−0 14·1	11·1	......	+69 51 38·6
	(f) α Aurigæ	1·9	9·1	+0·4	310 12 5·8	− 0·1	......	......	......	+0 10·2	8·5	......	+45 49 53·9
	δ Ursæ Minoris S.P.	6·0	13·5	+0·2	262 38 10·0	......	......	......	......	−0 43·8	9·6	......	+86 35 16·4
	(g) 51 (Hev.) Cephei	43·0	48·7	+0·2	268 46 46·0	+ 0·2	47·3	29·46	47·2	−0 35·0	9·5	......	+87 15 58·6
Jan. 15	(h) α Pegasi	30·8	35·1	−0·4	341 40 32·5	− 0·1	47·5	29·14	46·8	+0 50·5	9·8	9·1	+14 20 46·2
	(i) γ Cephei	43·9	51·3	+0·4	279 17 48·1	+ 0·1	......	......	......	−0 21·6	8·6	......	+76 44 42·5
	γ Pegasi	35·1	40·0	−0·4	341 43 37·2	......	47·8	29·12	46·7	+0 50·5	10·6	......	+14 17 41·4
	(k) Moon South L.	49·1	54·0	−0·1	329 24 51·5	− 3·4	......	......	......	+0 31·9	......	......	+26 36 49·1
	(l) Moon North L.	27·7	33·5	−0·1	328 51 30·4	+ 3·1	48·4	29·00	47·9	+0 31·0	......	......	+27 10 4·6
	β Tauri	32·0	37·0	−0·1	327 33 34·5	......	......	......	......	+0 29·4	9·5	......	+28 28 5·2
	26 Aurigæ	3·2	8·8	0·0	325 38 6·1	......	47·6	28·97	47·5	+0 27·0	......	......	+30 23 36·0
	(m) 51 (Hev.) Cephei	41·6	45·9	+0·2	268 46 43·9	+ 0·2	......	......	......	−0 34·4	8·3	......	+87 15 59·4
	(n) δ Ursæ Minoris S.P.	5·4	12·7	+0·2	262 38 9·3	− 2·0	47·0	28·95	47·0	−0 43·3	7·8	......	+86 35 14·9
Jan. 16	(o) Sun North L.	26·2	29·2	−0·3	16 45 27·4	− 0·2	43·7	28·98	44·4	+3 55·9	......	9·4	−20 47 13·7
	(p) α Cygni	16·2	21·2	+0·3	311 19 19·0	+ 0·1	......	......	......	+0 11·3	9·0	......	+44 42 39·0
	ζ Cygni	14·5	19·8	0·0	326 27 17·1	......	......	......	......	+0 28·3	8·9	......	+29 34 24·0
	α Cephei	35·3	41·1	+0·5	294 7 38·8	......	42·6	29·01	43·8	−0 6·0	9·5	......	+61 54 36·6
	Juno	46·2	50·0	−0·6	358 53 47·5	......	40·6	29·06	42·4	+1 34·8	......	......	− 2 53 12·9
	β Tauri	32·2	36·8	−0·1	327 33 34·5	......	40·0	29·04	41·6	+0 30·0	10·1	......	+28 28 4·9
	26 Aurigæ	4·3	9·0	0·0	325 38 6·7	......	......	......	......	+0 27·5	......	......	+30 23 35·2
	A. S. C. 717	41·1	45·0	−0·1	328 6 42·9	......	......	......	......	+0 30·6	......	......	+27 54 55·9
	136 Tauri	24·5	29·0	−0·1	328 27 26·5	......	......	......	......	+0 31·1	......	......	+27 34 11·8
	(q) Moon North L.	10·0	14·9	−0·1	327 57 12·3	+ 1·4	......	......	......	+0 30·4	......	......	+28 4 25·3
	(r)	9·0	15·5	−0·1	327 57 12·1	0·0	......	......	......	+0 30·4	......	......	+28 4 26·9

(a) The Telescope was moved 59° 59′ upon the Limb of the Circle.
(b) At Wire IV.
(c) At 23^h 35^m 10^s.
(d) At 6^h 26^m 12^s.
(e) At 1^h 36^m 20^s.
(f) 15^s after transit.
(g) At 6^h 26^m 20^s.
(h) At Wire V.
(i) At 23^h 34^m 0^s.
(k) At 4^h 40^m 5^s.
(l) At 4^h 41^m 35^s.
(m) At 6^h 26^m 0^s.
(n) At 6^h 28^m 20^s.
(o) 12^s after transit.
(p) 30^s after transit.
(q) At 5^h 49^m 7^s.
(r) At 5^h 50^m 8^s.

Date.	Object Observed.	Microscope. I.	Microscope. II.	Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point observed.	Equatorial Point adopted.	Apparent Declination observed.
		"	"	"	° ′ "	"	°	In.	°	′ "	"	"	° ′ "
Jan. 16	ϰ Aurigæ	30·0	33·8	0·0	326 28 32·0	......	......	......	......	+ 0 28·6	......	9·4	+29 33 8·8
Jan. 17	Sun South L.	23·1	25·6	−0·3	17 6 24·0	......	39·0	29·28	40·4	+ 4 7·2	......	10·0	−21 8 21·2
	α Cephei	37·1	42·0	+0·5	294 7 40·1	......	......	......	......	− 0 6·1	10·4	......	+61 54 36·0
	β Cephei	42·0	48·6	+0·4	286 10 45·7	......	39·6	29·31	40·9	− 0 14·4	10·3	......	+69 51 38·7
	(a) ε Pegasi	30·7	33·9	−0·5	346 52 31·7	......	......	......	......	+ 1 1·9	10·5	......	+ 9 8 36·4
	Juno	8·3	12·9	−0·6	358 43 10·1	......	35·9	29·42	38·8	+ 1 36·3	......	......	− 2 42 36·4
	η Draconis S.P.	14·2	19·2	+0·1	237 56 16·7	......	34·9	29·45	36·9	− 1 51·4	9·0	......	+61 52 15·3
	α Aurigæ R.	27·0	25·7	+0·5	109 57 26·7	......	......	......	......	− 0 10·6	9·6	......	+45 49 52·5
	(b) ϰ Aurigæ	29·6	33·0	0·0	326 28 31·4	+ 0·1	34·7	29·46	38·5	+ 0 29·3	......	......	+29 33 9·2
	51 (Hev.) Cephei	44·2	48·0	+0·2	268 46 46·2	......	......	......	......	− 0 35·9	9·6	......	+87 15 59·7
	(c) δ Ursæ Minoris S.P.	9·4	15·2	+0·2	262 38 12·6	− 1·0	......	......	......	− 0 45·2	10·8	......	+86 35 16·4
	ε Geminorum	26·8	31·0	−0·1	330 44 28·8	......	......	......	......	+ 0 35·0	......	......	+25 17 6·2
	(d) Moon North L.	32·8	37·0	−0·1	329 14 34·8	+ 6·0	......	......	......	+ 0 32·9	......	......	+26 46 56·3
	(e)	40·0	44·0	−0·1	329 14 41·9	− 1·5	34·9	29·44	37·8	+ 0 32·9	......	......	+26 46 56·7
Jan. 18	β Tauri	31·0	35·0	−0·1	327 33 33·0	......	42·0	28·90	42·8	+ 0 29·7	8·4	8·2	+28 28 5·5
	β Draconis S.P.	55·0	60·2	+0·1	228 29 57·7	......	......	......	......	− 2 49·8	7·2	......	+52 24 59·7
	β Aurigæ	19·0	24·2	+0·3	311 6 21·8	......	......	......	......	+ 0 11·1	......	......	+44 55 35·3
	μ Geminorum	0·5	5·2	−0·2	333 26 2·6	......	42·2	28·93	42·7	+ 0 37·7	6·7	......	+22 35 27·9
	(f) δ Ursæ Minoris S.P.	6·5	12·1	+0·2	262 38 9·6	− 1·6	......	......	......	− 0 43·7	8·9	......	+86 35 16·1
	(g) δ Geminorum	10·4	14·9	−0·2	333 45 12·4	0·0	40·7	28·92	42·0	+ 0 38·1	8·6	......	+22 16 17·7
	β Geminorum	10·0	16·0	−0·1	327 37 12·8	......	......	......	......	+ 0 29·9	9·1	......	+28 24 25·5
	(h) Moon North L.	34·2	38·2	−0·2	332 30 36·0	+ 5·1	......	......	......	+ 0 36·2	......	......	+23 30 50·9
	(i)	45·5	49·9	−0·2	332 30 47·5	− 7·1	42·9	28·91	42·9	+ 0 36·2	......	......	+23 30 51·6
Jan. 19	θ Cancri	35·8	39·7	−0·3	337 23 37·5	......	......	......	......	+ 0 43·3	......	9·4	+18 37 48·6
	(k) λ Ursæ Minoris S.P.	31·0	35·9	+0·2	264 52 33·8	− 2·1	39·6	28·64	40·4	− 0 40·1	8·6	......	+88 49 42·2
	δ Cancri	8·9	14·1	−0·3	337 17 11·1	......	......	......	......	+ 0 43·1	......	......	+18 44 15·2
	ε Hydræ	58·9	63·3	−0·5	349 1 0·6	......	......	......	......	+ 1 5·2	9·6	......	+ 7 0 3·6
	ι Ursæ Majoris	9·2	14·1	+0·4	307 22 12·0	......	......	......	......	+ 0 7·3	10·0	......	+48 39 50·1
	(l) Moon North L.	45·2	49·9	−0·3	337 16 47·2	− 7·8	39·1	28·67	40·7	+ 0 43·2	......	......	+18 44 47·2
Jan. 20	Sun North L.	35·8	38·2	−0·4	15 57 36·7	......	39·6	28·99	40·2	+ 3 44·6	......	......	−19 59 11·9
Jan. 21	Sun South L.	7·3	11·1	−0·4	16 17 8·7	......	42·7	28·27	42·1	+ 3 42·9	......	8·2	−20 18 43·4
	(m) α Andromedæ	2·0	7·1	−0·1	327 49 4·5	− 0·1	43·0	28·23	42·4	+ 0 29·2	7·1	......	+28 12 34·6
	γ Pegasi	34·8	38·8	−0·4	341 43 36·5	......	......	......	......	+ 0 49·4	8·3	......	+14 17 42·3
	α Aurigæ	2·2	7·8	+0·4	310 12 5·3	......	......	......	......	+ 0 9·9	8·6	......	+45 49 53·0
	β Orionis	36·9	41·0	−0·5	4 23 38·5	......	43·5	28·68	42·5	+ 1 56·8	6·8	......	− 8 23 27·1
	β Draconis S.P.	54·1	59·9	+0·1	228 29 57·1	......	......	......	......	− 2 47·9	9·2	......	+52 25 1·0
	γ Draconis S.P.	22·3	27·4	+0·1	227 35 24·9	......	......	......	......	− 2 57·1	9·2	......	+51 30 19·6
	δ Ursæ Minoris S.P.	3·9	9·5	+0·2	262 38 7·0	......	......	......	......	− 0 43·2	9·4	......	+86 35 15·6
	(n) 51 (Hev.) Cephei	38·4	43·2	+0·2	268 46 40·9	+ 0·2	......	......	......	− 0 34·3	7·3	......	+87 16 1·4
	α Lyræ S.P.	0·0	4·2	0·0	214 50 2·1	......	42·6	28·84	42·3	−10 2·8	......	......	+38 37 51·1
Jan. 22	α Andromedæ	2·0	7·3	−0·1	327 49 4·6	......	37·0	28·98	40·8	+ 0 30·4	8·4	8·8	+28 12 33·8
	α Cassiopeæ	16·1	20·9	+0·5	300 22 18·9	......	......	......	......	+ 0 0·3	9·6	......	+55 39 49·6
	(g) 12 Canum Venat. S.P.	6·8	12·2	0·0	215 22 9·4	− 0·3	......	......	......	− 9 23·2	......	......	+39 10 37·1
	(o) α Ursæ Minoris	52·0	57·9	+0·2	267 34 55·2	+ 3·0	36·4	29·00	39·0	− 0 36·9	8·8	......	+88 27 47·5
	(p) ε Ursæ Minoris S.P.	55·4	61·7	+0·1	258 19 58·7	− 0·2	......	......	......	− 0 51·7	8·0	......	+82 16 58·0
	β Orionis	34·8	38·9	−0·5	4 23 36·4	......	35·6	29·11	38·0	+ 2 0·6	8·4	......	− 8 23 28·2
	51 (Hev.) Cephei	41·5	45·1	+0·2	268 46 43·4	......	......	......	......	− 0 35·5	8·7	......	+87 16 0·9
	(q) δ Ursæ Minoris S.P.	5·8	11·9	+0·2	262 38 9·1	− 0·5	......	......	......	− 0 44·8	9·8	......	+86 35 15·0
	α Lyræ S.P.	30·5	33·7	0·0	214 50 32·1	......	34·5	29·14	38·4	−10 19·7	......	......	+38 38 3·6

(a) Preceding divisions.
(b) At Wire V.
(c) At $6^{h}\ 27^{m}\ 0^{s}$.
(d) At $6^{h}\ 57^{m}\ 44^{s}$.
(e) At $6^{h}\ 58^{m}\ 53^{s}$.

(f) At $6^{h}\ 20^{m}\ 25^{s}$.
(g) At Wire IV.
(h) At $8^{h}\ 3^{m}\ 16^{s}$.
(i) At $8^{h}\ 4^{m}\ 27^{s}$.

(k) At $8^{h}\ 28^{m}\ 0^{s}$.
(l) At $9^{h}\ 4^{m}\ 10^{s}$; limb a little deficient, cor = −″0·4.
(m) 12^{s} after transit.

(n) At $6^{h}\ 25^{m}\ 50^{s}$.
(o) At $0^{h}\ 54^{m}\ 40^{s}$.
(p) At $5^{h}\ 3^{m}\ 55^{s}$.
(q) At $6^{h}\ 26^{m}\ 5^{s}$.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Jan. 24	α Cassiopeæ …………	15·1	21·8	+0·5	300 22 18·9	……	……	……	……	+ 0 0·3	9·3	8·9	+55 39 49·7
	(a) α Ursæ Minoris ……	16·7	21·5	+0·2	267 34 19·3	+37·1	42·0	28·02	42·8	− 0 35·3	8·5	……	+88 27 47·8
Jan. 25	α Andromedæ………	3·7	8·5	−0·1	327 49 6·0	……	33·8	28·61	38·8	+ 0 30·2	9·1	8·8	+28 12 32·6
	γ Pegasi………………	35·9	39·2	−0·4	341 43 37·2	……	……	……	……	+ 0 51·1	10·3	……	+14 17 40·5
	α Cassiopeæ …………	17·2	21·9	+0·5	300 22 20·0	……	……	……	……	+ 0 0·3	10·2	……	+55 39 48·5
	β Ceti ………………	41·9	44·1	−0·4	14 50 42·6	……	……	……	……	+ 3 27·8	6·6	……	−18 52 1·6
	(b) α Ursæ Minoris…….	26·5	31·0	+0·2	267 34 29·0	+28·3	……	……	……	− 0 36·6	……	……	+88 27 48·1
	(c) ………………………	47·5	52·0	+0·2	267 34 50·0	+ 7·0	……	……	……	− 0 36·6	7·9	……	+88 27 48·4
	………………………	54·2	60·0	+0·2	267 34 57·3	……	34·8	28·63	37·4	− 0 36·6	……	……	+88 27 48·1
	γ Draconis S.P. ……	23·8	27·6	+0·1	227 35 25·8	……	36·0	28·58	37·6	− 2 59·2	9·2	……	+51 30 17·8
	(d) δ Ursæ Minoris S.P.	2·5	9·0	+0·2	262 38 6·0	− 0·2	……	……	……	− 0 43·7	8·9	……	+86 35 13·3
	51 (Hev.) Cephei…..	39·0	43·4	+0·2	268 46 41·3	……	36·0	28·55	37·8	− 0 34·7	8·3	……	+87 16 2·2
Jan. 26	α Ursæ Majoris S.P.	18·9	24·0	+0·1	238 40 21·5	……	……	……	……	− 1 42·1	7·3	7·7	+62 36 31·7
	β Pegasi………………	34·5	37·9	−0·1	328 48 36·2	……	37·0	27·97	40·0	+ 0 30·6	……	……	+27 13 0·9
	γ Cephei……. ……	46·0	52·9	+0·4	279 17 49·9	……	……	……	……	− 0 21·2	8·8	……	+76 44 39·0
	(e) ε Bootis………………	48·2	53·1	−0·1	328 16 50·5	+ 0·3	……	……	……	+ 0 30·9	6·9	……	+27 44 46·0
	(f) Moon South L.…….	27·0	29·0	−0·3	17 46 27·6	−16·3	33·0	28·65	34·9	+ 4 18·3	……	……	−21 48 21·9
Jan. 27	Sun North L.………	23·8	26·4	−0·4	14 19 24·7	……	33·0	28·79	37·0	+ 3 22·5	……	8·5	−18 20 38·7
	α Ursæ Majoris S.P.	23·3	27·6	+0·1	238 40 25·5	……	……	……	……	− 1 46·3	7·1	……	+62 36 30·7
	α Pegasi………………	30·5	34·2	−0·4	341 40 31·9	……	32·8	28·86	37·5	+ 0 51·6	9·0	……	+14 20 45·0
	γ Cephei………………	48·5	55·6	+0·4	279 17 52·5	……	……	……	……	− 0 22·1	10·3	……	+76 44 38·1
	(g) α Ursæ Minoris…….	27·9	31·6	+0·2	267 34 30·0	+27·9	32·1	28·89	37·5	− 0 37·1	8·0	……	+88 27 47·7
	ε Ursæ Minoris S.P.	54·9	60·8	+0·1	258 19 58·0	……	……	……	……	− 0 52·2	8·2	……	+82 16 57·3
	δ Ursæ Minoris S.P.	2·9	9·5	+0·2	262 38 6·5	……	……	……	……	− 0 44·8	9·1	……	+86 35 13·2
	(h) 51 (Hev.) Cephei…..	37·9	42·8	+0·2	268 46 40·5	+ 0·3	……	……	……	− 0 35·5	7·5	……	+87 16 3·2
	(i) α Lyræ S.P.………	33·5	36·5	0·0	214 50 35·0	− 0·3	31·8	28·98	37·0	−10 20·0	……	……	+38 38 6·2
Jan. 28	α Cygni………………	20·1	24·2	+0·3	311 19 22·5	……	36·0	29·15	37·1	+ 0 11·6	9·0	7·8	+44 42 33·7
Jan. 29	α Cephei………………	39·0	43·8	+0·5	294 7 42·0	……	……	……	……	− 0 6·1	8·7	……	+61 54 31·9
	β Cephei ………………	43·8	50·9	+0·4	286 10 47·7	……	35·2	29·15	37·2	− 0 14·5	8·6	……	+69 51 34·6
	β Ceti ………………	36·9	39·2	−0·4	14 50 37·6	……	……	……	……	+ 3 32·2	6·1	……	−18 52 2·0
	(k) α Ursæ Minoris…….	27·5	31·9	+0·2	267 34 29·9	+28·1	33·7	29·18	36·9	− 0 37·4	……	……	+88 27 47·2
	(l) ………………………	49·3	53·3	+0·2	267 34 51·5	+ 6·9	……	……	……	− 0 37·4	……	……	+88 27 46·8
	………………………	55·8	60·5	+0·2	267 34 58·4	……	……	……	……	− 0 37·4	8·2	……	+88 27 46·8
	(m) ………………………	50·5	55·2	+0·2	267 34 53·1	+ 6·5	……	……	……	− 0 37·4	……	……	+88 27 45·6
	ζ Ursæ Majoris S.P.	50·1	55·1	+0·1	231 49 52·7	……	34·0	29·19	36·9	− 2 26·0	……	……	+55 45 18·9
	ε Ursæ Minoris S.P.	54·4	59·0	+0·1	258 19 56·8	……	35·0	29·24	36·6	− 0 52·3	7·5	……	+82 16 56·7
	51 (Hev.) Cephei…..	38·2	42·4	+0·2	268 46 40·4	……	……	……	……	− 0 35·7	7·5	……	+87 16 3·1
	(n) δ Ursæ Minoris S.P.	1·0	7·8	+0·2	262 38 4·7	− 0·5	……	……	……	− 0 44·8	7·2	……	+86 35 11·6
	α Lyræ S.P.………	23·0	26·0	0·0	214 50 24·5	……	34·3	29·29	36·8	−10 23·5	……	……	+38 37 53·2
Jan. 30	Sun South L.………	29·8	33·0	−0·4	14 4 31·0	……	31·4	29·49	36·4	+ 3 25·0	……	9·1	−18 5 46·9
	α Cephei………………	40·5	44·5	+0·5	294 7 43·1	……	……	……	……	− 0 6·2	9·4	……	+61 54 32·2
	β Cephei ………………	44·1	51·6	+0·4	286 10 48·2	……	……	……	……	− 0 14·7	8·6	……	+69 51 35·6
	α Ursæ Minoris ……	57·5	63·0	+0·2	267 35 0·4	……	31·5	29·41	35·5	− 0 37·8	……	……	+88 27 46·5
	(o) ………………………	51·8	56·2	+0·2	267 34 54·2	+ 6·5	……	……	……	− 0 37·8	9·4	……	+88 27 46·2
	(p) ………………………	30·9	35·1	+0·2	267 34 33·2	+26·5	……	……	……	− 0 37·8	……	……	+88 27 47·2
Jan. 31	Sun North L.………	49·6	52·7	−0·4	13 15 50·7	……	38·2	28·97	38·8	+ 3 8·4	……	7·8	−17 16 51·3
	α Cephei………………	39·5	44·0	+0·5	294 7 42·3	……	……	……	……	− 0 6·0	8·5	……	+61 54 31·5
	α Ursæ Majoris S.P.	23·2	27·9	+0·1	238 40 25·6	……	……	……	……	− 1 45·6	7·3	……	+62 36 32·2
	α Pegasi………………	29·9	33·9	−0·4	341 40 31·5	……	38·2	29·01	39·6	+ 0 51·2	7·7	……	+14 20 45·1

(a) At $0^h 35^m 45^s$.
(b) On Wire I. at $0^h 39^m 1^s$.
(c) On Wire II. at $0^h 50^m 36^s$.
(d) At $6^h 22^m 40^s$.
(e) 54^s after transit.
(f) At $14^h 42^m 19^s$.
(g) On Wire I. at $0^h 39^m 6^s$.
(h) At $6^h 25^m 50^s$.
(i) At Wire V.
(k) On Wire I. at $0^h 38^m 59^s$.
(l) On Wire II. at $0^h 50^m 31^s$.
(m) On Wire IV. at $1^h 13^m 4^s$.
(n) At $6^h 25^m 48^s$.
(o) On Wire IV. at $1^h 13^m 2^s$.
(p) On Wire V. at $1^h 24^m 20^s$.

Date.	OBJECT OBSERVED.	Microscope. I.	Microscope. II.	Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point observed.	Equatorial Point adopted.	Apparent Declination observed.
		"	"	"	° ′ "	"	°	In.	°	′ "	"	"	° ′ "
Feb. 3	δ Geminorum	10·8	14·1	−0·2	333 45 12·2	......	35·0	28·58	37·9	+0 38·1	8·3	8·9	+22 16 18·6
	⁎ R.A. 7^h 17^m 42^s..	55·5	58·9	−0·5	345 5 56·7	......	......	......	......	+0 57·2	......	......	+10 55 15·0
	α Geminorum follow.	39·8	43·1	0·0	323 47 41·5	......	......	......	......	+0 25·1	8·2	......	+32 14 2·3
	α Canis Minoris	10·6	13·0	−0·5	350 23 11·4	......	......	......	......	+1 8·9	10·1	.....	+ 5 37 48·6
Feb. 6	Sun South L.	29·2	30·2	−0·4	12 3 29·4	......	41·9	29·18	42·4	+2 55·2	......	8·4	−16 4 16·2
	β Cephei	46·5	54·1	+0·4	286 10 50·7	......	......	......	......	−0 14·3	9·3	......	+69 51 32·0
	(a) α Ursæ Majoris S.P.	24·4	29·0	+0·1	238 40 26·8	0·0	41·2	29·20	41·4	−1 45·6	7·4	......	+62 36 32·8
Feb. 7	(b) Moon South L.	1·6	6·0	−0·5	351 2 3·2	− 0·4	......	......	......	+1 9·1	......	8·3	+ 4 58 56·4
	(c) α Cassiopeæ	17·0	22·1	+0·5	300 22 20·0	+ 0·8	42·8	28·47	42·0	+0 0·3	8·9	......	+55 39 47·2
	α Ursæ Minoris	54·4	59·2	+0·2	267 34 57·0	......	......	......	......	−0 35·8	7·3	......	+88 27 47·1
	ζ Ursæ Majoris S.P.	46·0	50·5	+0·1	231 49 48·4	......	......	......	......	−2 19·7	......	......	+55 45 20·4
	η Ursæ Majoris S.P.	41·2	46·1	+0·1	226 11 43·7	......	......	......	......	−3 11·8	7·7	......	+50 6 23·6
Feb. 8	(d) Sun North L.	58·0	62·0	−0·4	10 53 59·6	0·0	37·7	28·83	39·8	+2 43·6	......	......	−14 54 34·9
	(e) Moon South L.	21·0	....	−0·5	344 28 23·0	−17·3	......	......	......	+0 56·3	......	......	+11 33 6·3
	(f)	7·1	....	−0·5	344 28 9·1	− 4·9	......	......	......	+0 56·3	......	......	+11 33 7·8
	(g)	56·0	60·8	−0·5	344 27 58·0	+ 6·4	37·8	28·90	40·0	+0 56·3	......	......	+11 33 7·6
Feb. 9	α Cephei	41·3	47·6	+0·5	294 7 45·0	......	41·7	28·76	41·4	−0 5·9	8·1	......	+61 54 29·2
	β Cephei	47·5	54·8	+0·4	286 10 51·5	......	......	......	......	−0 14·1	9·3	......	+69 51 30·9
Feb. 10	(d) Sun South L.	11·7	15·7	−0·4	10 48 13·4	0·0	......	......	......	+2 41·1	......	7·9	−14 48 46·6
	γ Cephei	50·0	57·0	+0·4	279 17 54·0	......	41·5	28·77	41·9	−0 21·6	9·1	......	+76 44 35·5
	α Ursæ Minoris	55·2	60·3	+0·2	267 34 58·0	......	41·2	28·85	42·0	−0 36·3	7·3	......	+88 27 46·2
	ζ Ursæ Majoris S.P.	48·3	52·9	+0·1	231 49 50·7	......	......	......	......	−2 22·0	......	......	+55 45 20·8
	⁎ R.A. 7^h 17^m 53^s..	47·8	52·4	−0·5	344 41 49·5	......	39·5	29·06	40·8	+0 56·9	......	......	+11 19 21·5
	(h) λ Ursæ Minoris S. P.	23·0	28·8	+0·2	264 52 26·0	− 1·6	......	......	......	−0 40·8	7·6	......	+88 49 35·7
	α Cygni S.P.	33·5	37·9	0·0	220 49 35·7	......	38·8	29·11	40·7	−4 55·9	......	......	+44 42 31·9
	α Cephei	41·2	47·2	+0·5	294 7 44·8	......	42·9	29·34	42·5	−0 6·3	7·2	......	+61 54 29·4
	β Cephei	47·1	54·9	+0·4	286 10 51·4	......	......	......	......	−0 14·3	8·7	......	+69 51 30·8
Feb. 11	Sun North L.	18·8	22·0	−0·5	9 56 19·8	......	42·9	......	......	+2 36·4	......	......	−13 56 48·3
	α Ursæ Minoris	55·8	61·6	+0·2	267 34 58·9	......	43·4	29·34	43·0	−0 36·8	7·6	......	+88 27 45·8
	(i) Moon South L.	20·5	25·5	−0·1	330 5 22·9	− 4·8	42·3	29·32	42·4	+0 33·4	......	......	+25 56 16·4
Feb. 12	Sun South L.	3·3	7·3	−0·4	10 9 4·9	......	45·8	28·97	44·0	+2 35·2	......	7·5	−14 9 32·6
	α Ursæ Majoris S.P.	23·2	28·0	+0·1	238 40 25·7	......	......	......	......	−1 43·8	7·0	......	+62 36 34·4
	α Pegasi	31·5	36·5	−0·4	341 40 33·6	......	45·8	28·93	45·0	+0 50·3	7·5	......	+14 20 43·6
	α Andromedæ	4·9	10·8	−0·1	327 49 7·8	......	45·5	28·89	44·9	+0 29·8	7·9	......	+28 12 29·9
	γ Pegasi	35·9	39·4	−0·4	341 43 37·3	......	......	......	......	+0 50·3	7·8	......	+14 17 39·9
	(k) α Ursæ Minoris	27·7	32·4	+0·2	267 34 30·3	+28·5	......	......	......	−0 36·2	......	......	+88 27 44·9
	(l)	48·0	53·8	+0·2	267 34 51·1	+ 7·1	......	......	......	−0 36·2	......	......	+88 27 45·5
	(m)	55·2	61·5	+0·2	267 34 58·6	......	......	......	......	−0 36·2	7·5	......	+88 27 45·1
	(n)	49·5	55·0	+0·2	267 34 52·5	+ 6·3	......	......	......	−0 36·2	......	......	+88 27 44·9
	(o)	28·8	34·2	+0·2	267 34 31·7	+26·1	44·1	28·92	44·2	−0 36·2	......	......	+88 27 45·9
	(p) Moon North L.	53·5	58·8	−0·1	327 55 56·0	− 0·3	......	......	......	+0 30·0	......	......	+28 5 41·8
	(q) Moon South L.	37·4	42·2	−0·1	328 28 39·8	+ 0·7	42·5	28·81	43·0	+0 30·7	......	......	+27 32 56·3
	(r) 136 Tauri	20·5	26·1	−0·1	328 27 23·1	+ 0·4	......	......	......	+0 30·7	......	......	+27 34 13·3
	⁎ R. A. 7^h 17^m 42^s..	54·3	59·0	−0·5	345 5 56·1	......	42·2	28·84	43·0	+0 56·9	......	......	+10 55 14·5
Feb. 13	(s) Sun North L.	44·9	48·5	−0·5	9 16 46·1	+ 0·1	41·5	29·22	42·2	+2 30·9	......	9·3	−13 17 7·8
	136 Tauri	21·0	26·1	−0·1	328 27 23·3	......	......	......	......	+0 31·5	......	......	+27 34 14·5
	α Orionis	40·9	45·6	−0·5	348 38 42·8	......	39·9	29·41	41·2	+1 6·0	8·7	......	+ 7 22 20·5
	κ Aurigæ	29·1	32·9	0·0	326 28 31·1	......	......	......	......	+0 29·0	......	......	+29 33 9·2

(a) 20^s after transit.
(b) At 0^h 27^m 20^s; faint.
(c) At Wire V.
(d) At Wire IV.
(e) At 1^h 18^m 15^s
(f) At 1^h 19^m 6^s.
(g) At 1^h 19^m 50^s.
(h) At 8^h 25^m 40^s.
(i) At 4^h 15^m 53^s.
(k) On Wire I. at 0^h 38^m 14^s.
(l) On Wire II. at 0^h 49^m 49^s.
(m) On Wire III.
(n) On Wire IV. at 1^h 12^m 20^s.
(o) On Wire V. at 1^h 23^m 39^s.
(p) At 5^h 22^m 20^s.
(q) At 5^h 23^m 48^s.
(r) 1^m after transit.
(s) At Wire IV. ; faint.

Date.	Object Observed.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Feb. 13	μ Geminorum	1·0	5·0	−0·2	333 26 2·8	......	......	......	......	+ 0 38·4	7·9	9·3	+22 35 28·1
	(a) δ Ursæ Minoris S.P.	58·0	64·0	+0·2	262 38 1·3	− 0·1	......	......	......	− 0 44·8	8·4	......	+86 35 7·1
	(b) Moon North L.	56·7	....	−0·1	328 22 59·3	+ 4·8	......	......	......	+ 0 31·5	......	......	+27 38 33·7
	(c)	59·8	65·0	−0·1	328 23 2·4	+ 0·5	......	......	......	+ 0 31·5	......	......	+27 38 34·9
	(d)	2·8	7·9	−0·1	328 23 5·3	− 2·7	......	......	......	+ 0 31·5	......	......	+27 38 35·2
	(e) α Canis Majoris	18·5	20·5	−0·4	12 29 19·1	− 0·2	......	......	......	+ 3 2·5	12·7	......	−16 30 12·1
	τ Geminorum	30·3	33·0	0·0	325 31 31·6	......	38·8	29·43	40·3	+ 0 27·9	......	......	+30 30 9·8
	δ Geminorum	9·5	13·8	−0·2	333 45 11·4	......	......	......	......	+ 0 39·0	8·6	......	+22 16 18·9
	⁎ R.A. $7^h 17^m 53^s$	48·1	52·3	−0·5	344 41 49·6	......	......	......	......	+ 0 57·7	......	......	+11 19 22·0
Feb. 14	Sun South L.	55·3	60·0	−0·5	9 28 57·2	......	41·2	29·52	41·6	+ 2 34·0	......	9·4	−13 29 21·8
	(f) α Geminorum follow.	37·3	41·3	0·0	323 47 39·4	+ 0·2	......	......	......	+ 0 25·7	7·7	......	+32 14 4·1
	(g) α Canis Minoris	10·0	13·6	−0·5	350 23 11·4	− 0·3	......	......	......	+ 1 10·4	10·3	......	+ 5 37 47·9
	(h) Moon North L.	12·0	....	−0·1	330 49 13·8	+10·0	......	......	......	+ 0 34·8	......	......	+25 12 10·8
	(i)	20·5	24·1	−0·1	330 49 22·2	+ 0·5	......	......	......	+ 0 34·8	......	......	+25 12 11·9
	(k)	29·0	33·0	−0·1	330 49 30·9	− 9·7	39·5	29·45	41·4	+ 0 34·8	......	......	+25 12 13·4
	θ Cancri	34·8	38·2	−0·3	337 23 36·3	......	......	......	......	+ 0 44·6	......	......	+18 37 48·5
	(l) λ Ursæ Minoris S. P.	23·5	27·2	+0·2	264 52 25·4	− 1·0	......	......	......	− 0 41·3	8·3	......	+88 49 33·7
	(m) ι Ursæ Majoris	5·6	10·8	+0·4	307 22 8·5	+ 0·6	38·8	29·44	41·2	+ 0 7·5	11·3	......	+48 39 52·8
Feb. 15	(e) α Andromedæ	4·8	9·9	−0·1	327 49 7·3	0·0	......	......	......	+ 0 29·9	7·0	7·3	+28 12 30·1
	γ Pegasi	35·3	38·8	−0·4	341 43 36·7	......	46·3	29·03	42·4	+ 0 50·5	7·2	......	+14 17 40·1
	α Cassiopeæ	19·9	24·8	+0·5	300 22 22·8	......	......	......	......	+ 0 0·3	9·4	......	+55 39 44·2
	(n) α Ursæ Minoris	30·9	34·0	+0·2	267 34 32·7	+27·1	......	......	......	− 0 36·2	......	......	+88 27 43·7
	(o)	48·6	53·2	+0·2	267 34 51·1	+ 7·0	......	......	......	− 0 36·2	......	......	+88 27 45·4
	......	56·1	61·8	+0·2	267 34 59·2	......	......	......	......	− 0 36·2	7·1	......	+88 27 44·3
	(p)	49·0	54·5	+0·2	267 34 52·0	+ 6·5	......	......	......	− 0 36·2	......	......	+88 27 45·0
	(q)	28·5	33·5	+0·2	267 34 31·2	+26·3	46·6	29·05	45·9	− 0 36·2	......	......	+88 27 46·0
	51 (Hev.) Cephei	31·0	36·0	+0·2	268 46 33·6	......	......	......	......	− 0 34·7	5·9	......	+87 16 8·4
	(r) δ Ursæ Minoris S.P.	55·1	61·5	+0·2	262 37 58·6	− 0·4	45·9	29·15	45·8	− 0 43·7	7·0	......	+86 35 7·2
	(m) ⁎ R.A. $7^h 17^m 42^s$	52·5	57·3	−0·5	345 5 54·4	− 0·2	......	......	......	+ 0 57·1	......	......	+10 55 16·0
	(e) 6 Cancri	18·5	23·5	−0·1	327 47 20·8	0·0	46·2	29·17	46·0	+ 0 30·0	......	......	+28 14 16·5
Feb. 18	Sun North L.	59·4	64·0	−0·5	7 34 1·2	......	38·8	30·01	40·8	+ 2 23·1	......	8·4	−11 34 15·9
Feb. 20	δ Ursæ Minoris S.P.	0·0	6·7	+0·2	262 38 3·6	......	......	......	......	− 0 46·7	10·5	......	+86 35 8·5
	(s) 51 (Hev.) Cephei	34·0	37·9	+0·2	268 46 36·1	+ 0·9	......	......	......	− 0 37·1	8·0	......	+87 16 8·5
	(t) α Lyræ S.P.	48·5	52·7	0·0	214 50 50·6	− 0·5	32·3	30·26	35·6	−10 46·7	......	......	+38 37 55·0
	(m) δ Geminorum	6·0	10·4	−0·2	333 45 8·0	0·0	......	......	......	+ 0 40·6	7·0	......	+22 16 19·8
	⁎ R. A. $7^h 17^m 53^s$	43·8	47·0	−0·5	344 41 44·8	......	......	......	......	+ 1 0·1	......	......	+11 19 23·5
	α Geminorum follow.	36·6	40·0	0·0	323 47 38·4	......	......	......	......	+ 0 26·8	8·0	......	+32 14 3·2
	α Canis Minoris	5·5	8·4	−0·5	350 23 6·5	......	32·5	30·26	35·8	+ 1 13·4	8·5	......	+ 5 38 48·5
Feb. 22	(m) Sun South L.	43·6	45·5	−0·5	6 40 44·0	+ 0·1	33·0	30·11	35·3	+ 2 19·2	......	8·6	−10 40 54·7
	(m) θ Ursæ Majoris	53·4	59·1	+0·4	303 37 56·7	+ 0·6	33·8	30·09	34·8	+ 0 3·9	8·9	......	+52 24 7·4
	ε Leonis	7·9	12·2	−0·2	331 31 9·8	......	......	......	......	+ 0 37·0	8·9	......	+24 30 21·8
	α Leonis	29·5	33·8	−0·4	343 16 31·2	......	33·0	30·09	34·9	+ 0 56·8	7·9	......	+12 44 40·6
Feb. 24	(u) Sun North L.	42·3	46·2	−0·5	5 24 43·8	− 0·3	37·3	30·23	37·2	+ 2 10·7	......	8·0	− 9 24 46·2
	(x) α Ursæ Majoris S.P.	34·1	38·0	+0·1	238 40 36·1	− 0·6	......	......	......	− 1 50·4	7·3	......	+62 36 37·1
	α Andromedæ	6·1	12·1	−0·1	327 49 9·0	......	38·3	30·23	37·8	+ 0 31·6	9·1	......	+28 12 27·4
	(t) β Ursæ Minoris S.P.	19·5	25·0	+0·1	250 51 22·3	− 0·1	35·8	30·24	37·8	− 1 10·1	7·1	......	+74 48 4·1
	μ Geminorum	58·9	63·0	−0·2	333 26 0·7	......	33·5	30·29	36·9	+ 0 40·1	7·7	......	+22 35 27·2
	51 (Hev.) Cephei	34·0	37·8	+0·2	268 46 36·0	......	......	......	......	− 0 37·0	7·8	......	+87 16 9·0
	(y) δ Ursæ Minoris S.P.	57·2	64·0	+0·2	262 38 0·9	− 0·3	......	......	......	− 0 46·6	8·3	......	+86 35 6·0
	α Lyræ S.P.	12·5	16·7	0·0	214 51 14·5	......	......	......	......	−10 45·6	......	......	+38 38 20·9

(a) At $6^h 24^m 10^s$.
(b) At $6^h 29^m 18^s$.
(c) At $6^h 30^m 11^s$.
(d) At $6^h 31^m 8^s$.
(e) At Wire IV.

(f) At Wire II.
(g) At $7^h 31^m 48^s$.
(h) At $7^h 34^m 9^s$.
(i) At $7^h 35^m 9^s$.
(k) At $7^h 36^m 30^s$.

(l) At $8^h 25^m 12^s$. After this observation the Telescope was accidentally touched.
(m) At Wire V.

(n) At $0^h 38^m 40^s$.
(o) On Wire II. at $0^h 49^m 45^s$.
(p) On Wire IV. at $1^h 12^m 18^s$.
(q) On Wire V. at $1^h 23^m 34^s$.
(r) At $6^h 25^m 20^s$.

(s) At $6^h 26^m 30^s$.
(t) 36^s after transit.
(u) 30^s before transit.
(x) 1^m after transit.
(y) At $6^h 25^m 0^s$.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		"	"	"	° ′ "	"	°	In.	°	′ "	"	"	° ′ "
Feb. 24	α Canis Majoris	6·8	10·0	−0·4	12 29 8·0	......	......	......	......	+3 9·8	7·7	8·0	−16 30 9·8
	(a) λ Ursæ Minoris S.P.	19·9	25·5	+0·2	264 52 22·8	− 0·2	33·0	30·30	35·9	−0 43·0	7·6	......	+88 49 31·6
	ε Hydræ	55·5	61·1	−0·5	349 0 57·8	......	......	......	......	+1 9·9	8·5	......	+ 7 0 0·3
	(b) ι Ursæ Majoris R.	24·9	25·1	+0·5	112 47 25·4	− 0·3	......	......	......	−0 7·8	7·2	......	+48 39 55·7
	θ Ursæ Majoris R.	35·6	35·0	+0·5	116 31 35·7	......	33·0	30·30	35·9	−0 3·8	10·2	......	+52 24 10·3
Feb. 25	Sun South L.	49·8	55·5	−0·5	5 34 52·2	......	39·7	30·34	38·5	+2 11·5	......	8·6	− 9 34 55·1
	β Pegasi	36·2	41·0	−0·1	328 48 38·6	......	......	......	......	+0 33·0	......	......	+27 12 57·0
	α Cassiopeæ	22·9	27·9	+0·5	300 22 25·8	......	......	......	......	+0 0·3	10·1	......	+55 39 42·5
	α Ursæ Minoris	1·0	7·0	+0·2	267 35 4·2	......	40·4	30·31	39·5	−0 38·2	8·7	......	+88 27 42·6
	(c) α Geminorum follow.	36·1	41·0	0·0	323 47 38·6	− 0·1	34·0	30·33	37·2	+0 26·8	8·5	......	+32 14 3·3
	ι Ursæ Majoris R.	25·0	25·9	+0·5	112 47 25·8	......	33·9	30·34	37·4	−0 7·8	7·7	......	+48 39 55·8
	θ Ursæ Majoris R.	33·7	33·0	+0·5	116 31 33·8	......	33·8	......	......	−0 3·8	8·1	......	+52 24 7·8
Feb. 26	Sun North L.	19·4	24·0	−0·5	4 40 21·2	......	35·3	30·32	36·8	+2 7·2	......	8·3	− 8 40 20·1
	β Pegasi	36·9	41·1	−0·1	328 48 39·0	......	......	......	......	+0 33·3	......	......	+27 12 56·0
	γ Cephei	57·1	64·0	+0·4	279 18 1·0	......	......	......	......	−0 23·0	10·2	......	+76 44 30·3
	α Andromedæ	5·8	11·0	−0·1	327 49 8·3	......	35·5	30·30	37·4	+0 31·9	8·3	......	+28 12 28·1
	β Ursæ Minoris S.P.	19·1	24·7	+0·1	250 51 21·9	......	35·2	30·28	37·6	−1 10·3	6·4	......	+74 48 3·3
	λ Ursæ Minoris S.P.	21·1	25·4	+0·2	264 52 23·3	......	33·4	30·27	36·7	−0 43·0	8·9	......	+88 49 32·0
	α Cygni S.P.	45·2	50·1	0·0	220 49 47·7	......	......	......	......	−5 11·3	......	......	+44 42 28·1
	ι Ursæ Majoris R.	25·5	25·4	+0·5	112 47 25·8	......	......	......	......	−0 7·8	7·6	......	+48 39 56·1
	θ Ursæ Majoris R.	34·0	34·0	+0·5	116 31 34·4	......	32·0	30·25	36·9	−0 3·8	8·5	......	+52 24 8·7
Feb. 27	Sun South L.	11·6	15·8	−0·5	4 50 13·2	......	34·6	30·17	35·5	+2 7·7	......	9·1	− 8 50 11·8
	γ Cephei	57·4	63·5	+0·4	279 18 0·9	......	......	......	......	−0 23·0	9·8	......	+76 44 31·2
	(d) α Ursæ Minoris	52·6	58·0	+0·2	267 34 55·5	+ 9·7	35·5	30·14	36·7	−0 38·4	9·0	......	+88 27 42·3
	α Arietis	9·7	13·0	−0·2	333 19 11·2	......	......	......	......	+0 39·5	8·4	......	+22 42 18·4
Feb. 29	α Ursæ Minoris	2·8	6·8	+0·2	267 35 5·0	......	36·6	30·17	37·8	−0 38·4	8·3	8·5	+88 27 41·9
	δ Ursæ Minoris S.P.	56·2	63·0	+0·2	262 37 59·9	......	......	......	......	−0 46·4	8·6	......	+86 35 5·0
	(e) 51 (Hev.) Cephei	33·8	37·9	+0·2	268 46 36·0	+ 0·3	34·5	30·19	37·6	−0 36·8	9·1	......	+87 16 9·0
	α Geminorum follow.	35·0	39·2	0·0	323 47 37·2	......	34·0	30·18	37·5	+0 26·6	7·2	......	+32 14 4·7
	α Canis Minoris	8·3	12·1	−0·5	350 23 9·8	......	......	......	......	+1 12·9	10·9	......	+ 5 37 45·8
	β Geminorum	6·2	11·7	−0·1	327 37 8·8	......	......	......	......	+0 31·6	8·8	......	+28 24 28·1
	ι Ursæ Majoris R.	27·5	26·5	+0·5	112 47 27·4	......	......	......	......	−0 7·8	8·7	......	+48 39 57·5
	(f) α Cephei S.P.	24·9	28·3	+0·1	237 58 26·8	− 1·0	......	......	......	−1 54·5	8·1	......	+61 54 22·8
	(g) θ Ursæ Majoris R.	34·4	34·0	+0·5	116 31 34·6	− 0·8	......	......	......	−0 3·8	7·3	......	+52 24 7·9
	β Cephei S.P.	55·3	60·2	+0·1	245 54 57·9	......	32·8	30·18	37·0	−1 24·1	8·3	......	+69 51 25·3
Mar. 2	Sun North L.	9·6	14·5	−0·5	2 47 11·5	......	35·9	30·34	37·0	+1 57·1	......	9·5	− 6 46 59·1
	Mercury Centre	29·9	33·1	−0·5	1 38 31·1	......	......	......	......	+1 51·8	......	......	− 5 38 13·4
	γ Cephei	59·7	64·9	+0·4	279 18 2·8	......	......	......	......	−0 23·0	10·5	......	+76 44 29·7
	α Persei R.	56·6	57·0	+0·5	113 24 57·3	......	35·5	30·31	37·4	−0 7·1	10·5	......	+49 17 27·1
	η Tauri	0·0	4·1	−0·2	332 25 1·8	......	......	......	......	+0 38·4	9·3	......	+23 36 29·3
	ζ Ursæ Minoris S.P.	37·5	41·9	+0·1	254 19 39·8	......	34·8	30·31	37·4	−1 2·3	7·7	......	+78 16 28·0
Mar. 3	α Persei R.	56·2	57·1	+0·5	113 24 57·2	......	38·7	30·33	38·6	−0 7·1	10·5	9·4	+49 17 27·1
Mar. 4	Sun South L.	22·8	25·9	−0·5	2 33 23·9	......	38·5	30·30	38·6	+1 55·2	......	......	− 6 33 9·7
	Mercury Centre	16·0	19·3	−0·6	359 51 17·0	......	39·2	......	......	+1 43·0	......	......	− 3 50 50·6
	(f) α Ursæ Minoris	36·5	40·2	+0·2	267 34 38·6	+25·6	40·7	30·24	39·5	−0 38·2	6·7	......	+18 27 43·4
	α Persei R.	56·9	57·2	+0·5	113 24 57·6	......	39·0	30·23	39·8	−0 7·0	11·2	......	+49 17 27·6
	η Tauri	0·2	4·8	−0·2	332 25 2·3	......	38·5	......	......	+0 38·1	9·4	......	+23 36 29·0
	α Cygni S.P.	50·6	56·1	0·0	220 49 53·4	......	......	......	......	−5 10·7	......	......	+44 42 33·3
	ε Hydræ	57·4	61·4	−0·5	349 0 58·9	......	33·7	30·24	37·1	+1 9·7	9·1	......	+ 7 0 0·8

(a) At $8^h 21^m 35^s$.
(b) At Wire IV.
(c) 10^s after transit.

(d) At $1^h 14^m 40^s$.
(e) At $6^h 25^m 8^s$.

(f) At Wire V.
(g) 45^s after transit.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Mar. 4	ι Ursæ Majoris R.	27·8	27·0	+0·5	112 47 27·8	......	......	......	......	−0 7·8	8·4	9·4	+48 39 57·0
	(a) α Cephei S.P.	25·0	28·9	+0·1	237 58 27·1	0·0	......	......	......	−1 54·6	10·5	......	+61 54 23·1
	α Hydræ	18·5	23·0	−0·5	3 58 20·3	......	33·3	30·24	37·3	+2 3·5	9·1	......	− 7 58 14·4
	β Pegasi	38·9	42·8	−0·1	328 48 40·8	......	......	......	......	+0 33·4	......	......	+27 12 55·2
Mar. 5	(b) Sun North L.	0·2	5·9	−0·5	1 38 2·6	+ 0·4	40·5	30·18	39·5	+1 50·0	......	8·8	− 5 36 44·2
	γ Cephei	58·9	66·1	+0·4	279 18 3·0	......	......	......	......	−0 22·7	10·1	......	+76 44 28·5
	Mercury Centre	39·9	42·6	−0·6	358 56 40·6	......	......	......	......	+1 38·7	......	......	− 2 56 10·5
	γ Ursæ Majoris S.P.	36·1	41·0	+0·1	230 39 38·7	......	......	......	......	−2 38·4	10·0	......	+54 34 51·5
	α Andromedæ	7·5	12·5	−0·1	327 49 9·9	......	39·5	30·18	39·9	+0 31·5	8·3	......	+28 12 27·4
	(c) α Ursæ Minoris	35·7	40·2	+0·2	267 34 38·2	+27·5	......	......	......	−0 38·1	......	......	+88 27 41·2
	(d)	56·5	62·0	+0·2	267 34 59·5	+ 7·0	......	......	......	−0 38·1	8·4	......	+88 27 40·4
	......	2·9	8·4	+0·2	267 35 5·8	......	40·0	30·15	40·0	−0 38·1	......	......	+88 27 41·1
	β Ursæ Minoris S.P.	19·2	26·0	+0·1	250 51 22·6	......	39·6	30·13	40·0	−1 9·3	7·3	......	+74 48 4·5
	α Persei R.	54·8	55·9	+0·5	113 24 55·9	......	......	......	......	−0 7·0	9·6	......	+49 17 26·5
	λ Ursæ Minoris S.P.	17·9	22·0	+0·2	264 52 20·1	......	36·8	30·12	38·9	−0 42·4	8·5	......	+88 49 28·9
	θ Ursæ Majoris R.	35·9	35·1	+0·5	116 31 35·9	......	......	......	......	−0 3·7	8·5	......	+52 24 9·8
	β Pegasi	39·3	44·0	−0·1	328 48 41·6	......	37·5	30·10	38·7	+0 32·9	......	......	+27 12 54·3
Mar. 6	Sun South L.	1·0	6·0	−0·5	1 47 2·9	......	......	......	......	+1 51·0	......	9·4	− 5 46 44·5
	γ Cephei	59·0	66·2	+0·4	279 18 3·0	......	......	......	......	−0 22·8	9·7	......	+76 44 29·2
	Mercury Centre	40·9	43·0	−0·6	358 1 41·3	......	......	......	......	+1 35·6	......	......	− 2 1 7·5
	α Andromedæ	9·5	15·3	−0·1	327 49 12·3	......	38·8	30·09	39·3	+0 31·5	10·6	......	+28 12 25·6
	(e) α Ursæ Minoris	35·0	39·2	+0·2	267 34 37·3	+28·3	......	......	......	−0 38·0	......	......	+88 27 41·8
	(f)	56·5	62·5	+0·2	267 34 59·7	+ 7·1	......	......	......	−0 38·0	......	......	+88 27 40·6
	......	4·0	9·6	+0·2	267 35 7·0	......	......	......	......	−0 38·0	8·7	......	+88 27 40·4
	(g)	56·9	63·0	+0·2	267 35 0·2	+ 6·3	......	......	......	−0 38·0	......	......	+88 27 40·9
	(h)	37·5	43·0	+0·2	267 34 40·5	+25·9	40·9	30·10	39·9	−0 38·0	......	......	+88 27 41·0
	(i) β Ursæ Minoris S.P.	20·0	26·9	+0·1	250 51 23·5	−0·2	41·5	30·10	40·4	−1 8·9	8·2	......	+74 48 5·0
	α Persei R.	55·1	56·2	+0·5	113 24 56·2	......	......	......	......	−0 7·0	10·0	......	+49 17 26·2
	λ Ursæ Minoris S.P.	17·6	22·2	+0·2	264 52 20·0	......	40·8	30·14	40·7	−0 42·1	8·9	......	+88 49 28·5
	(k) α Cygni S.P.	36·5	41·0	0·0	220 49 38·8	− 0·1	......	......	......	−5 5·1	......	......	+44 42 24·2
Mar. 7	Sun North L.	33·5	37·5	−0·5	0 51 34·9	......	43·4	30·26	40·7	+1 46·2	......	8·2	− 4 51 12·9
	Mercury Centre	24·4	28·8	−0·6	357 6 25·9	......	......	......	......	+1 31·6	......	......	− 1 5 49·3
	α Cassiopeæ	25·2	30·1	+0·5	300 22 28·0	......	......	......	......	+0 0·3	9·7	......	+55 39 39·9
	(l) δ Geminorum	7·2	11·1	−0·2	333 45 8·9	+ 0·1	44·1	30·31	41·6	+0 39·7	7·5	......	+22 16 19·5
	α Geminorum follow.	34·5	38·8	0·0	323 47 36·8	......	......	......	......	+0 26·2	6·9	......	+32 14 5·2
	λ Ursæ Minoris S.P.	16·8	21·9	+0·2	264 52 19·5	......	45·0	30·34	43·7	−0 42·0	8·7	......	+88 49 29·3
	α Cygni S.P.	35·8	40·0	0·0	220 49 37·9	......	......	......	......	−5 4·5	......	......	+44 42 25·2
	α Cephei S.P.	18·3	23·0	+0·1	237 58 20·8	......	42·8	30·34	43·2	−1 52·5	7·1	......	+61 54 20·1
Mar. 8	α Ursæ Minoris	5·1	10·0	+0·2	267 35 7·7	......	45·9	30·36	41·5	−0 37·9	9·5	......	+88 27 38·4
Mar. 9	(a) Sun South L.	56·0	61·2	−0·5	0 36 58·0	+ 0·1	51·7	30·33	50·1	+1 43·6	......	6·8	− 4 36 34·9
	γ Cephei	57·2	65·1	+0·4	279 18 1·6	......	......	......	......	−0 22·3	7·9	......	+76 44 27·5
	α Andromedæ	6·5	12·9	−0·1	327 49 9·6	......	......	......	......	+0 30·9	6·9	......	+28 12 26·3
	Mercury Centre	55·2	62·0	−0·6	355 15 58·0	......	......	......	......	+1 24·3	......	......	+ 0 44 44·5
	α Cassiopeæ	23·8	29·2	+0·5	300 22 26·9	......	......	......	......	+0 0·3	8·1	......	+55 39 39·6
	(m) α Ursæ Minoris	32·4	36·9	+0·2	267 34 34·9	+29·0	......	......	......	−0 37·2	......	......	+88 27 40·1
	(n)	54·8	60·0	+0·2	267 34 57·6	+ 7·4	......	......	......	−0 37·2	......	......	+88 27 39·0
	......	2·5	8·2	+0·2	267 35 5·5	......	53·5	30·31	52·3	−0 37·2	6·7	......	+88 27 38·5
	(o)	55·7	61·2	+0·2	267 34 58·7	+ 5·9	......	......	......	−0 37·2	......	......	+88 27 39·4
	(p)	35·5	41·1	+0·2	267 34 38·5	+25·1	......	......	......	−0 37·2	......	......	+88 27 40·4
	(q) Moon South L.	39·5	....	−0·1	330 56 42·7	− 7·8	......	......	......	+0 34·9	......	......	+25 4 57·0
	(r)	34·5	40·8	−0·1	330 56 37·5	− 1·9	......	......	......	+0 34·9	......	......	+25 4 56·3

(a) 30^s after transit.
(b) At 23^h 5^m 53^s.
(c) At 0^h 38^m 15^s.
(d) On Wire II. at 0^h 49^m 28^s.
(e) On Wire I. at 0^h 37^m 54^s.
(f) On Wire II. at 0^h 49^m 26^s.
(g) On Wire IV. at 1^h 11^m 54^s.
(h) On Wire V. at 1^h 23^m 8^s.
(i) At 2^h 51^m 40^s.
(k) At Wire IV.
(l) 36^s after transit.
(m) On Wire I. at 0^h 37^m 35^s.
(n) On Wire II. at 0^h 49^m 8^s.
(o) On Wire IV. at 1^h 11^m 35^s.
(p) On Wire V. at 1^h 22^m 48^s.
(q) At 3^h 56^m 8^s.
(r) At 3^h 57^m 1^s.

Date.	OBJECT OBSERVED.	Microscope. I.	Microscope. II.	Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point observed.	Equatorial Point adopted.	Apparent Declination observed.
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Mar. 9	(a) Moon South L.	25·6	32·5	−0·1	330 56 28·9	+ 6·2	51·8	30·26	51·0	+0 34·9	……	6·8	+25 4 56·8
	λ Ursæ Minoris S.P.	13·2	19·5	+0·2	264 52 16·5	……	44·9	30·23	45·7	−0 41·9	6·3	……	+88 49 27·8
	α Cephei S.P.	14·2	21·0	+0·1	237 58 17·8	……	43·9	30·20	45·0	−1 51·9	5·1	……	+61 54 19·1
Mar. 10	γ Cephei	58·0	66·3	+0·4	279 18 2·6	……	47·0	30·10	46·0	−0 22·3	8·6	7·9	+76 44 27·6
Mar. 11	Sun North L.	46·6	51·9	−0·6	359 17 48·7	……	46·8	30·10	46·0	+1 38·5	……	……	− 3 17 19·3
	(b) Moon South L.	51·8	57·5	−0·1	328 33 54·6	+ 2·7	……	……	……	+0 32·0	……	……	+27 27 38·6
	(c) Moon North L.	21·5	27·1	−0·1	328 1 24·1	− 1·0	45·2	30·05	45·8	+0 31·3	……	……	+28 0 13·5
	α Geminorum follow.	34·0	39·0	0·0	323 47 36·6	……	43·9	30·05	44·6	+0 26·0	6·8	……	+32 14 5·3
	(d) α Canis Minoris	7·9	13·0	−0·5	350 23 10·0	+ 0·1	……	……	……	+1 11·1	9·1	……	+ 5 37 46·7
	β Geminorum	5·5	12·0	−0·1	327 37 8·6	……	……	……	……	+0 30·8	8·6	……	+28 24 28·5
	λ Ursæ Minoris S.P.	14·7	20·5	+0·2	264 52 17·7	……	44·1	30·05	44·8	−0 41·7	8·2	……	+88 49 28·1
	(e) α Cephei S.P.	15·9	21·7	+0·1	237 58 19·0	− 0·2	……	……	……	−1 51·7	6·9	……	+61 54 19·2
	θ Ursæ Majoris	49·5	56·9	+0·4	303 37 53·7	……	……	……	……	+0 3·7	8·6	……	+52 24 10·5
	β Cephei S.P.	47·9	53·8	+0·1	245 54 51·0	……	42·0	30·03	43·5	−1 22·0	6·5	……	+69 51 21·1
	Venus Centre	43·1	45·9	−0·4	11 56 44·0	……	45·6	29·91	44·8	+2 57·0	……	……	−15 57 33·1
Mar. 12	Sun South L.	23·7	28·0	−0·6	359 26 25·2	……	47·9	29·90	47·2	+1 38·2	……	8·8	− 3 25 54·6
	(f) Moon North L.	15·1	….	−0·1	329 49 16·9	+ 7·1	……	……	……	+0 33·5	……	……	+26 12 11·3
	(g) ……	22·0	25·9	−0·1	329 49 23·9	+ 0·7	……	……	……	+0 33·5	……	……	+26 12 10·7
	(h) ……	27·2	31·0	−0·1	329 49 29·0	− 5·9	44·0	29·82	45·0	+0 33·5	……	……	+26 12 12·2
	α Geminorum follow.	34·7	39·8	0·0	323 47 37·3	……	……	……	……	+0 25·8	7·3	……	+32 14 5·7
	α Canis Minoris	10·4	14·5	−0·5	350 23 12·0	……	……	……	……	+1 10·6	10·5	……	+ 5 37 46·2
	β Geminorum	5·5	12·4	−0·1	327 37 8·8	……	……	……	……	+0 30·6	8·6	……	+28 24 29·4
	φ Geminorum	4·0	10·0	−0·1	328 51 6·9	……	……	……	……	+0 32·2	……	……	+27 10 29·7
Mar. 13	Sun North L.	41·5	45·0	−0·6	358 30 42·6	……	47·0	29·62	47·0	+1 33·9	……	8·9	− 2 30 7·6
	(i) α Ursæ Minoris	59·0	64·9	+0·2	267 35 2·1	+ 3·9	48·0	29·64	46·7	−0 36·8	7·4	……	+88 27 39·7
	α Canis Minoris	10·9	15·0	−0·5	350 23 12·5	……	44·7	29·68	45·4	+1 10·1	10·5	……	+ 5 37 46·3
	β Geminorum	7·0	12·9	−0·1	327 37 9·8	……	……	……	……	+0 30·4	9·5	……	+28 24 28·7
	(k) φ Geminorum	5·2	11·4	−0·1	328 51 8·2	0·0	……	……	……	+0 32·0	……	……	+27 10 28·7
	(l) Moon North L.	14·2	18·2	−0·2	333 19 16·0	+ 8·3	……	……	……	+0 38·2	……	……	+22 42 6·4
	δ Craneri	7·2	14·2	−0·3	337 17 10·3	……	……	……	……	+0 44·2	……	……	+18 44 14·4
	ε Hydræ	59·5	65·0	−0·5	349 1 1·7	……	44·6	29·68	45·1	+1 6·8	8·9	……	+ 7 0 0·4
	(k) θ Ursæ Majoris	49·5	56·9	+0·4	303 37 53·7	+ 0·6	……	……	……	+0 3·6	9·5	……	+52 24 11·0
	β Cephei S.P.	47·4	53·2	+0·1	245 54 50·4	……	44·0	29·68	44·9	−1 20·7	7·8	……	+69 51 20·8
Mar. 14	η Tauri	2·4	8·0	−0·2	332 25 5·0	……	48·0	29·67	48·7	+0 36·6	10·1	9·3	+23 36 27·7
	(m) λ Ursæ Minoris S.P.	14·3	19·8	+0·2	264 52 17·2	− 0·2	42·9	29·67	44·0	−0 41·3	8·5	……	+88 49 26·4
	(k) δ Caneri	7·2	14·0	−0·3	337 17 10·2	0·0	……	……	……	+0 44·4	……	……	+18 44 14·7
Mar. 15	α Geminorum follow.	34·2	39·1	0·0	323 47 36·8	……	41·6	29·57	45·2	+0 25·7	6·9	9·2	+32 14 6·7
	α Canis Minoris	10·5	15·1	−0·5	350 23 12·4	……	……	……	……	+1 10·3	10·6	……	+ 5 37 46·5
	β Geminorum	7·0	13·5	−0·1	327 37 10·1	……	……	……	……	+0 30·5	10·0	……	+28 24 28·6
Mar. 17	Sun South L.	11·8	16·3	−0·6	357 28 13·5	……	44·0	30·03	43·8	+1 32·0	……	7·5	− 1 27 38·0
	α Cassiopeæ	26·9	32·2	+0·5	300 22 29·9	……	……	……	……	+0 0·3	9·1	……	+55 39 37·3
	(k) Mercury Centre	45·5	50·9	−0·5	348 33 47·7	+ 0·9	……	……	……	+1 6·6	……	……	+ 7 27 12·3
	α Ursæ Minoris	4·8	10·0	+0·2	267 35 7·6	……	45·6	30·03	44·7	−0 37·5	7·2	……	+88 27 37·4
	(n) δ Geminorum	6·2	11·2	−0·2	333 45 8·5	+ 0·1	41·0	30·03	44·0	+0 39·6	7·3	……	+22 16 19·3
	α Geminorum follow.	34·3	39·4	0·0	323 47 37·0	……	……	……	……	+0 26·1	7·6	……	+32 14 4·4
	λ Ursæ Minoris S.P.	13·0	19·6	+0·2	264 52 16·4	……	42·0	30·02	43·9	−0 41·8	8·0	……	+88 49 27·1
	α Cygni S.P.	33·5	38·1	0·0	220 49 35·8	……	……	……	……	−5 3·1	……	……	+44 42 25·2
	ι Ursæ Majoris	56·5	62·2	+0·4	307 21 59·7	……	……	……	……	+0 7·6	7·4	……	+48 40 0·2
	θ Ursæ Majoris	48·6	55·8	+0·4	303 37 52·7	……	……	……	……	+0 3·7	8·7	……	+52 24 11·1

(a) At $3^h\ 58^m\ 3^s$.
(b) At $6^h\ 8^m\ 35^s$.
(c) At $6^h\ 10^m\ 1^s$.
(d) At Wire II.

(e) At Wire IV.
(f) At $7^h\ 13^m\ 16^s$.
(g) At $7^h\ 14^m\ 6^s$.

(h) At $7^h\ 15^m\ 6^s$.
(i) At $1^h\ 9^m\ 45^s$.
(k) At Wire V.

(l) At $8^h\ 14^m\ 24^s$.
(m) At $8^h\ 22^m\ 0^s$.
(n) 45^s after transit.

Date.	OBJECT OBSERVED.	Microscope. I.	Microscope. II.	Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point observed.	Equatorial Point adopted.	Apparent Declination observed.
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Mar. 17	β Cephei S.P.	46·1	51·8	+0·1	245 54 49·1	......	41·5	30·03	43·9	−1 22·1	6·0	7·5	+69 51 19·5
	α Ursæ Majoris R.	56·9	57·1	+0·4	126 43 57·4	......	......	......	......	+0 6·9	7·4	......	+62 36 43·2
	σ Leonis	51·8	56·2	−0·5	349 6 53·4	......	......	......	......	+1 8·6	......	......	+ 6 54 5·5
	υ Leonis	20·6	23·9	−0·6	355 57 21·6	......	......	......	......	+1 27·8	......	......	+ 0 3 18·1
	γ Cephei S.P.	33·3	38·9	+0·1	252 47 36·3	......	......	......	......	−1 4·2	5·9	......	+76 44 24·6
	(a) Moon North L.	37·8	42·0	−0·6	356 14 39·3	+11·5	......	......	......	+1 28·8	......	......	− 0 14 12·1
	(b) Moon South L.	51·0	55·7	−0·6	356 45 52·7	−14·1	39·0	30·01	42·4	+1 30·5	......	......	− 0 45 1·6
	(c) γ Cephei	0·3	8·0	+0·4	279 18 4·6	+ 0·1	42·0	......	......	−0 22·5	8·2	7·8	+76 44 25·6
Mar. 18	Sun North L.	26·9	30·2	−0·6	356 32 27·8	......	43·5	29·96	43·9	+1 28·8	......	......	− 0 31 48·8
	Mercury Centre	28·5	32·9	−0·5	347 52 30·1	......	......	......	......	+1 5·0	......	......	+ 8 8 32·7
	α Ursæ Minoris	6·8	12·0	+0·2	267 35 9·6	......	44·9	29·95	44·8	−0 37·4	9·0	......	+88 27 35·6
	β Ursæ Minoris S.P.	19·5	26·1	+0·1	250 51 22·8	......	44·7	29·95	45·3	−1 8·1	6·4	......	+74 48 6·9
	α Persei	31·0	37·7	+0·4	306 44 34·8	......	43·5	......	......	+0 6·9	5·7	......	+49 17 26·1
	λ Ursæ Minoris S.P.	13·0	19·1	+0·2	264 52 16·2	......	41·0	29·98	43·4	−0 41·9	7·8	......	+88 49 26·5
	ε Hydræ	57·7	62·5	−0·5	349 0 59·6	......	......	......	......	+1 8·0	7·9	......	+ 7 0 0·2
	ι Ursæ Majoris	58·0	63·8	+0·4	307 22 1·2	......	......	......	......	+0 7·6	9·0	......	+48 39 59·0
	θ Ursæ Majoris	48·2	55·9	+0·4	303 37 52·5	......	......	......	......	+0 3·7	8·7	......	+52 24 11·6
	β Cephei S.P.	47·0	52·5	+0·1	245 54 49·9	......	41·0	29·98	43·2	−1 22·0	7·2	......	+69 51 20·1
	α Ursæ Majoris R.	57·4	58·0	+0·4	126 43 58·1	......	......	......	......	+0 6·9	7·9	......	+62 36 43·6
	7 Virginis	19·6	24·0	−0·5	351 28 21·4	......	40·1	29·99	42·9	+1 14·4	......	......	+ 4 32 32·0
	η Virginis	32·2	36·1	−0·6	355 47 33·7	......	......	......	......	+1 27·1	......	......	+ 0 13 7·0
	(d) Moon South L.	38·8	....	−0·5	2 56 40·6	+12·1	......	......	......	+1 55·5	......	......	− 6 56 40·4
	(e)	53·5	58·3	−0·5	2 56 55·3	− 4·8	40·5	29·99	42·9	+1 55·5	......	......	− 6 56 38·2
Mar. 19	(f) λ Ursæ Minoris	13·7	18·9	+0·2	264 52 16·4	− 0·2	43·8	30·03	44·4	−0 41·7	8·2	7·8	+88 49 26·7
	ε Hydræ	58·2	63·3	−0·5	349 1 0·2	......	......	......	......	+1 7·7	8·2	......	+ 6 59 59·9
	ι Ursæ Majoris	57·6	62·9	+0·4	307 22 0·6	......	......	......	......	+0 7·6	8·6	......	+48 39 59·6
	α Hydræ	22·8	26·0	−0·5	3 58 24·0	......	42·7	30·02	43·9	+2 0·2	8·1	......	− 7 58 16·4
	α Ursæ Majoris R.	57·3	58·5	+0·4	126 43 58·3	......	......	......	......	+0 6·9	7·8	......	+62 36 43·8
	γ Cephei S.P.	33·7	38·8	+0·1	252 47 36·5	......	40·0	30·02	43·4	−1 4·4	6·5	......	+76 44 24·3
	α Cassiopeæ S.P.	11·5	17·1	+0·1	231 44 14·4	......	39·0	30·01	40·6	−2 29·2	6·9	......	+55 39 37·4
	ψ Virginis	23·9	27·8	−0·5	4 40 25·3	......	......	......	......	+2 5·2	......	......	− 8 40 22·7
	49 Virginis	10·1	13·1	−0·5	5 53 11·2	......	......	......	......	+2 12·3	......	......	− 9 53 15·7
	(g) α Ursæ Minoris S.P.	24·7	29·3	+0·2	264 30 27·2	− 0·2	......	......	......	−0 42·8	7·8	......	+88 27 36·4
	(h) Moon South L.	10·0	13·0	−0·5	8 46 11·0	+ 9·0	......	......	......	+2 32·2	......	......	−12 46 44·4
	(i)	26·3	28·8	−0·5	8 46 27·0	− 8·1	38·0	30·02	39·5	+2 32·2	......	......	−12 46 43·3
Mar. 20	α Cassiopeæ	28·5	32·8	+0·5	300 22 31·0	......	......	......	......	+0 0·3	9·5	8·6	+55 39 37·3
	α Ursæ Minoris	5·8	11·4	+0·2	267 35 8·8	......	39·5	30·07	41·8	−0 38·0	7·0	......	+88 27 37·8
	λ Ursæ Minoris S.P.	16·4	20·9	+0·2	264 52 18·8	......	34·2	30·12	37·5	−0 42·7	10·0	......	+88 49 27·5
	ε Hydræ	57·8	61·8	−0·5	349 0 59·3	......	......	......	......	+1 9·3	8·9	......	+ 7 0 0·0
	α Hydræ	19·5	22·9	−0·5	3 58 20·8	......	34·0	30·13	37·0	+2 2·9	7·5	......	− 7 58 15·1
	Venus Centre	56·5	59·5	−0·5	8 45 57·5	......	37·0	30·17	39·0	+2 33·2	......	......	−12 46 22·1
Mar. 21	Sun South L.	33·9	36·0	−0·6	355 53 34·4	......	38·9	30·14	39·4	+1 28·0	......	......	+ 0 7 6·2
Mar. 22	(k) Venus Centre	24·0	28·8	−0·5	7 59 25·9	+ 0·2	38·9	29·94	41·0	+2 25·6	......	8·9	−11 59 42·8
Mar. 24	θ Ursæ Majoris	48·8	54·0	+0·4	303 37 51·9	......	35·4	30·10	39·6	+0 3·7	9·2	......	+52 24 13·3
	α Ursæ Majoris	27·3	32·8	+0·5	293 25 30·5	......	......	......	......	−0 7·0	8·6	......	+62 36 45·4
	δ Leonis	38·2	42·0	−0·2	334 37 40·0	......	34·7	30·12	39·2	+0 41·6	8·8	......	+21 23 47·3
Mar. 27	Sun North L.	7·6	13·4	−0·5	353 0 10·0	......	41·8	29·96	41·9	+1 18·2	......	8·4	+ 3 0 40·2
Mar. 28	Sun South L.	44·9	49·9	−0·5	353 8 47·0	......	42·6	29·75	42·4	+1 17·9	......	......	+ 2 52 3·5

(a) At 11^h 39^m 19^s.
(b) At 11^h 40^m 55^s.
(c) At 23^h 33^m 10^s.
(d) At 12^h 25^m 19^s.
(e) At 12^h 26^m 24^s.
(f) At 8^h 22^m 15^s.
(g) At 13^h 2^m 20^s.
(h) At 13^h 11^m 38^s.
(i) At 13^h 12^m 50^s.
(k) At 22^h 14^m 4^s.

Date.	Object Observed.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Mar. 28	α Ursæ Minoris·······	8·3	14·9	+0·2	267 35 11·8	······	······	······	······	−0 37·4	8·2	8·4	+88 27 34·0
Mar. 30	α Cassiopeæ···········	29·8	34·8	+0·5	300 22 32·7	······	······	······	······	+0 0·3	8·6	······	+55 34 35·4
Mar. 31	(a) Sun North L.·········	53·5	59·8	−0·5	351 26 56·1	−0·3	······	······	······	+1 11·9	······	9·5	+ 4 34 1·8
	(b) Sun South L.·········	52·3	57·0	−0·5	351 58 54·2	+0·4	44·2	29·27	44·8	+1 13·2	······	······	+ 4 2 1·7
	α Ursæ Minoris ······	10·2	14·8	+0·2	267 35 12·7	······	······	······	······	−0 36·6	9·0	······	+88 27 33·4
	α Hydræ··············	27·0	31·5	−0·5	3 58 28·8	······	······	······	······	+1 57·7	9·8	······	− 7 58 17·0
	θ Ursæ Majoris·······	47·7	54·0	+0·4	303 37 51·3	······	40·0	29·24	42·0	+0 3·6	9·6	······	+52 24 14·6
Apr. 2	α Hydræ··············	22·8	27·2	−0·5	3 58 24·6	······	37·4	29·75	40·6	+2 0·6	8·2	8·3	− 7 58 16·9
	θ Ursæ Majoris·······	46·5	53·2	+0·4	303 37 50·3	······	······	······	······	+0 3·7	9·0	······	+52 24 14·3
	ε Leonis ················	4·2	9·1	−0·2	331 31 6·4	······	······	······	······	+0 36·2	7·7	······	+24 30 25·7
	Venus Centre········	39·7	44·0	−0·5	3 21 41·3	······	38·0	29·82	41·6	+1 57·5	······	······	− 7 21 30·5
Apr. 3	Sun South L. ········	43·9	47·6	−0·5	350 49 45·3	······	38·7	29·78	41·1	+1 12·4	······	8·2	+ 5 11 10·5
	α Ursæ Minoris ······	11·4	16·4	+0·2	267 35 14·1	······	······	······	······	−0 37·7	8·4	······	+88 27 31·8
	α Arietis ···············	13·0	19·0	−0·2	333 19 15·8	······	39·8	29·77	41·4	+0 38·7	9·2	······	+22 42 13·7
	α Persei················	34·9	41·4	+0·4	306 44 38·6	······	40·6	29·74	41·7	+0 7·0	7·1	······	+49 17 22·6
	Venus Centre········	57·5	62·1	−0·5	2 54 59·3	······	45·0	29·54	44·0	+1 52·5	······	······	− 6 54 43·6
Apr. 4	(c) Sun North L.·········	55·2	60·0	−0·5	349 54 57·1	−0·4	······	······	······	+1 8·4	······	7·0	+ 6 6 1·9
	(d) Sun South L. ········	51·0	54·0	−0·5	350 26 51·9	+0·4	46·9	29·57	46·6	+1 9·7	······	······	+ 5 34 5·0
	α Ursæ Minoris ······	9·5	16·6	+0·2	267 35 13·2	······	······	······	······	−0 36·8	8·1	······	+88 27 30·6
	α Aurigæ···············	59·1	65·5	+0·4	310 12 2·6	······	······	······	······	+0 10·3	7·1	······	+45 49 54·1
	β Orionis···············	35·9	40·0	−0·5	4 23 37·5	······	48·5	29·59	48·0	+1 59·4	5·7	······	− 8 23 29·9
	β Tauri··················	28·8	34·2	−0·1	327 33 31·5	······	······	······	······	+0 30·0	7·1	······	+28 28 5·5
Apr. 6	(e) Moon South L.·······	19·9	····	−0·1	329 24 22·2	−2·8	······	······	······	+0 32·0	······	7·3	+26 37 15·9
	(f) ·························	18·2	····	−0·1	329 24 20·5	+0·3	······	······	······	+0 32·0	······	······	+26 37 14·5
	(g) ·························	13·5	18·3	−0·1	329 24 15·8	+3·7	44·9	28·99	45·2	+0 32·0	······	······	+26 37 15·8
	α Aurigæ···············	0·2	6·8	+0·4	310 12 3·8	······	······	······	······	+0 10·2	8·0	······	+45 49 53·3
	(h) β Orionis···············	37·9	42·9	−0·5	4 23 40·0	−0·1	······	······	······	+1 57·9	6·8	······	− 8 23 30·5
	γ Orionis···············	0·3	5·0	−0·5	349 49 2·2	······	44·4	29·00	45·6	+1 7·2	······	······	+ 6 11 57·9
Apr. 7	α Persei ···············	36·9	41·2	+0·4	306 44 39·5	······	39·0	29·63	42·4	+0 6·9	7·2	······	+49 17 20·9
Apr. 8	Venus Centre········	30·5	35·5	−0·5	0 38 32·6	······	45·9	29·98	43·8	+1 43·8	······	······	− 4 38 9·1
Apr. 9	(i) Sun North L.·········	8·0	13·9	−0·5	348 2 10·4	······	47·9	29·99	46·5	+1 4·8	······	······	+ 7 58 52·1
Apr. 18	ε Bootis·················	49·5	54·4	−0·1	328 16 51·8	······	······	······	······	+0 31·5	11·1	8·8	+27 44 45·5
	α^2 Libræ ················	54·5	57·6	−0·4	11 21 55·6	······	40·6	29·67	45·0	+2 51·8	7·0	······	−15 22 38·6
	β Ursæ Minoris ······	8·6	15·1	+0·4	281 14 12·3	······	······	······	······	−0 20·1	8·9	······	+74 48 16·6
	(k) Jupiter North L.·····	6·7	9·5	−0·4	11 17 7·6	0·0	······	······	······	+2 51·0	······	······	−15 17 49·8
	(l) Jupiter South L. ·····	50·9	54·7	−0·4	11 17 52·5	−0·4	······	······	······	+2 51·0	······	······	−15 18 34·3
	β Libræ ················	37·9	41·5	−0·5	4 47 39·3	······	······	······	······	+2 3·9	8·2	······	− 8 47 34·4
	α Persei S.P.··········	56·9	63·1	+0·1	225 23 0·2	······	······	······	······	−3 32·0	······	······	+49 17 19·4
	(m) Moon South L.·······	59·2	62·0	−0·3	20 40 0·3	0·0	39·9	29·67	44·7	+5 41·5	······	······	−24 43 33·0
Apr. 20	α Bootis·················	36·6	40·8	−0·3	336 0 38·4	······	45·1	29·47	46·7	+0 41·9	7·6	7·8	+20 0 47·5
	ε Bootis ················	46·3	52·1	−0·1	328 16 49·0	······	······	······	······	+0 31·0	8·1	······	+27 44 47·8
	β Ursæ Minoris······	6·5	13·0	+0·4	281 14 10·2	······	45·4	29·78	46·5	−0 19·9	7·6	······	+74 48 17·5
Apr. 21	(l) α Cassiopeæ ···········	32·5	38·0	+0·5	300 22 35·9	+0·8	48·7	29·85	48·7	+0 0·3	8·1	7·7	+55 39 30·7
	α Ursæ Minoris ······	15·0	20·5	+0·2	267 35 17·9	······	······	······	······	−0 37·0	7·3	······	+88 27 26·8

(a) At 0^h 39^m 15^s.
(b) At 0^h 40^m 45^s.
(c) At 0^h 54^m 5^s.
(d) At 0^h 55^m 25^s.
(e) At 4^h 40^m 16^s, } faint.
(f) At 4^h 41^m 4^s, } faint.
(g) At 4^h 41^m 45^s; faint.
(h) At Wire IV.
(i) Faint.
(k) At Wire I.
(l) At Wire V.
(m) At 15^h 21^m 10^s.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		"	"	"	° ′ "	"	°	In.	°	′ "	"	"	° ′ "
Apr. 22	(a) Sun South L.	59·0	65·0	−0·5	343 58 1·6	+0·3	51·3	29·85	50·0	+0 55·6	......	7·3	+12 3 9·8
	(b) ε Bootis	42·8	48·6	−0·1	328 16 45·5	+0·8	......	......	......	+0 30·8	5·6	......	+27 44 50·2
	(c) α² Libræ	58·9	64·1	−0·4	11 22 1·0	−0·5	53·7	29·76	53·5	+2 47·7	7·6	......	−15 22 40·9
	(d) Jupiter South L.	39·9	44·0	−0·4	11 10 41·5	0·0	......	......	......	+2 46·0	......	......	−15 11 20·2
	(e) Jupiter North L.	55·2	61·9	−0·4	11 9 58·2	−1·1	......	......	......	+2 46·0	......	......	−15 10 35·8
	(f) Venus Centre	14·9	21·5	−0·6	354 2 17·5	+0·2	57·8	29·77	54·0	+1 18·1	......	......	+1 58 31·5
	(g) α Ursæ Minoris	15·5	22·0	+0·2	267 35 18·9	0·0	......	......	......	−0 36·3	8·7	......	+88 27 24·7
Apr. 24	(h) Sun North L.	27·0	33·2	−0·4	342 46 29·6	−0·1	......	......	......	+0 52·4	......	7·5	+13 14 45·6
	(i) Sun South L.	12·7	20·2	−0·4	343 18 16·1	+1·6	58·9	29·80	57·9	+0 53·4	......	......	+12 42 56·4
	(k) α Ursæ Majoris R.	4·0	7·5	+0·4	126 44 6·2	−0·6	53·0	29·82	55·7	+0 6·7	6·9	......	+62 36 51·2
	γ Cephei S.P.	22·8	28·3	+0·1	252 47 25·5	......	......	......	......	−1 2·3	6·7	......	+76 44 15·7
	(f) β Leonis	29·6	33·2	−0·4	340 33 31·1	0·0	......	......	......	+0 49·1	7·6	......	+15 27 47·3
	γ Ursæ Majoris	1·1	7·3	+0·5	301 27 4·6	......	53·0	29·81	54·0	+0 1·4	7·9	......	+54 35 1·5
	α Cassiopeæ S.P.	58·7	64·7	+0·1	231 44 1·8	......	......	......	......	−2 24·3	6·8	......	+55 39 30·0
	(l) α Ursæ Minoris S.P.	11·2	18·5	+0·2	264 30 15·0	−0·3	51·9	29·82	53·2	−0 41·3	7·8	......	+88 27 25·9
	η Ursæ Majoris R.	3·8	5·0	+0·5	114 14 4·9	......	......	......	......	−0 5·9	7·9	......	+50 6 37·9
	α Bootis	36·2	40·7	−0·3	336 0 38·1	......	49·9	29·81	52·9	+0 42·0	8·0	......	+20 0 47·4
	(d) Jupiter North L.	37·2	42·5	−0·4	11 5 39·4	0·0	......	......	......	+2 47·2	......	......	−15 6 19·1
	(m) Jupiter South L.	21·5	27·6	−0·4	11 6 24·1	−0·6	49·0	29·82	53·1	+2 47·2	......	......	−15 7 3·2
Apr. 25	(n) Sun South L.	40·2	46·0	−0·4	342 58 42·8	+0·3	55·0	29·77	54·9	+0 53·2	......	7·9	+13 2 31·6
	α Aurigæ	1·1	8·3	+0·4	310 12 5·0	......	59·5	29·73	56·4	+0 10·1	6·9	......	+45 49 52·8
	α Orionis	40·5	48·5	−0·5	348 38 44·1	......	64·7	......	......	+1 3·5	7·3	......	+7 22 20·3
	β Leonis	29·9	34·0	−0·4	340 33 31·6	......	55·2	29·77	56·3	+0 48·8	7·9	......	+15 27 47·5
	(o) α Cassiopæ S.P.	57·2	63·8	+0·1	231 44 0·6	0·0	55·2	29·77	56·2	−2 23·1	6·9	......	+55 39 29·6
	12 Canum Venat. R.	31·0	30·5	+0·4	103 18 31·2	......	......	......	......	−0 17·3	9·1	......	+39 10 52·4
	(p) α Ursæ Minoris S.P.	12·5	18·1	+0·2	264 30 15·5	−0·1	......	......	......	−0 40·9	9·1	......	+88 27 26·6
	(q) Jupiter South L.	18·9	22·0	−0·4	11 4 20·1	0·0	......	......	......	+2 45·4	......	......	−15 4 57·6
	(r) Jupiter North L.	34·8	39·6	−0·4	11 3 36·9	−0·5	52·5	29·78	54·0	+2 45·4	......	......	−15 4 13·9
Apr. 26	α Ursæ Minoris	16·9	22·4	+0·2	267 35 19·8	......	57·5	30·05	55·4	−0 36·6	8·2	7·5	+88 27 24·3
Apr. 27	α Tauri	16·9	22·0	−0·4	339 50 19·0	......	58·8	30·02	57·0	+0 47·6	7·2	......	+16 11 0·9
	α Aurigæ	1·9	9·1	+0·4	310 12 5·9	......	......	......	......	+0 10·2	7·7	......	+45 49 51·4
	β Tauri	30·8	37·5	−0·1	327 33 34·1	......	60·0	30·00	57·5	+0 29·7	8·3	......	+28 28 3·7
	(s) α Ursæ Majoris R.	7·8	8·0	+0·4	126 44 8·3	−1·2	51·0	29·98	55·6	+0 6·8	7·9	......	+62 36 52·8
	γ Cephei S.P.	25·1	29·0	+0·1	252 47 27·1	......	......	......	......	−1 3·2	7·9	......	+76 44 16·4
	α Cassiopeæ S.P.	59 8	66·3	+0·1	231 44 3·2	......	49·0	29·98	53·9	−2 26·0	6·9	......	+55 39 29·7
	12 Canum Venat. R.	30·1	29·7	+0·4	103 18 30·3	......	......	......	......	−0 17·6	7·4	......	+39 10 51·6
	α Ursæ Minoris S.P.	9·7	14·9	+0·2	264 30 12·5	......	......	......	......	−0 41·8	5·9	......	+88 27 23·2
	(t) η Ursæ Majoris R.	3·9	5·4	+0·5	114 14 5·2	−0·1	......	......	......	−0 6·0	7·2	......	+50 6 38·0
	(q) Jupiter North L.	11·0	15·0	−0·4	10 59 12·6	0·0	......	......	......	+2 47·3	......	......	−14 59 52·4
	(f) Jupiter South L.	53·0	57·2	−0·4	10 59 54·7	−0·2	47·5	29·95	53·0	+2 47·3	......	......	−15 0 34·3
	Venus Centre	51·3	57·0	−0·5	351 39 53·7	......	......	......	......	+1 12·6	......	......	+4 21 1·2
	α Ursæ Minoris	16·5	22·0	+0·2	267 35 19·4	......	52·4	29·84	55·0	−0 36·7	7·4	......	+88 27 24·8
Apr. 28	Sun North L.	33·0	37·9	−0·4	341 29 35·1	......	53·9	29·80	55·0	+0 50·6	......	8·4	+14 31 42·7
	α Ursæ Majoris R.	7·0	7·0	+0·4	126 44 7·4	......	59·9	29·80	59·0	+0 6·6	7·9	......	+62 36 52·0
	β Leonis	29·9	35·6	−0·4	340 33 32·4	......	......	......	......	+0 48·4	8·6	......	+15 27 47·6
	γ Ursæ Majoris	0·5	7·1	+0·5	301 27 4·3	......	57·1	29·83	57·7	+0 1·4	8·5	......	+54 35 2·7
	12 Canum Venat. R.	30·8	30·1	+0·4	103 18 30·9	......	56·0	29·82	56·9	−0 17·3	8·1	......	+39 10 51·6
	η Ursæ Majoris R.	5·2	6·8	+0·5	114 14 6·5	......	......	......	......	−0 5·9	8·6	......	+50 6 38·6
	η Bootis	31·5	37·2	−0·3	336 49 34·1	......	55·0	29·83	57·1	+0 42·8	8·7	......	+19 11 51·5
	(q) Jupiter South L.	47·5	51·1	−0·4	10 57 48·9	0·0	......	......	......	+2 45·0	......	......	−14 58 25·5
	(c) Jupiter North L.	3·1	9·6	−0·4	10 57 5·9	−0·4	52·0	29·83	53·9	+2 45·0	......	......	−14 57 42·1

(a) At 2ʰ 1ᵐ 35ˢ.
(b) At 14ʰ 39ᵐ 46ˢ.
(c) At Wire V.
(d) At Wire II.
(e) At 14ʰ 54ᵐ 46ˢ.

(f) At Wire IV.
(g) At 1ʰ 2ᵐ 0ˢ.
(h) At 2ʰ 8ᵐ 15ˢ.
(i) At 2ʰ 10ᵐ 15ˢ.
(k) At 10ʰ 55ᵐ 6ˢ.

(l) At 13ʰ 3ᵐ 50ˢ.
(m) 54ˢ after transit.
(n) At 2ʰ 13ᵐ 5ˢ.
(o) At 12ʰ 32ᵐ 18ˢ.
(p) At 13ʰ 2ᵐ 36ˢ.

(q) At Wire I.
(r) 50ˢ after transit.
(s) At 10ʰ 55ᵐ 34ˢ.
(t) At 13ʰ 42ᵐ 16ˢ.

Date.	Object Observed.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Apr. 29	Mercury Centre	32·9	36·4	−0·5	352 37 34·2	......	......	......	......	+1 14·9	......	8·6	+ 3 23 19·5
	(a) α Ursæ Minoris	19·1	23·9	+0·2	267 35 21·7	+0·1	......	......	......	−0 36·6	9·4	......	+88 27 23·4
	Venus Centre.........	20·8	24·2	−0·5	350 43 22·0	......	57·0	30·02	55·9	+1 10·0	......	......	+ 5 17 36·6
Apr. 30	Sun South L.	14·0	20·1	−0·4	341 24 14·9	0·0	......	.....	......	+0 50·4	......	......	+14 37 3·3
	(b)	− 1·8	....										
	(c) Sun North L.	25·7	30·5	−0·4	340 52 27·7	+0·4	57·9	30·01	57·0	+0 49·5	......	......	+15 8 51·0
	α Persei	40·4	48·0	+0·4	306 44 44·6	......	......	......	......	+0 6·7	8·1	......	+49 17 17·3
	α Aurigæ	3·0	10·0	+0·4	310 12 6·9	......	......	......	......	+0 10·2	8·3	......	+45 49 51·5
	γ Orionis	59·2	65·0	−0·5	349 49 1·6	......	59·2	30·01	58·0	+1 7·4	......	......	+ 6 11 59·6
May 1	(d) Sun North L.	17·9	23·1	−0·4	340 34 15·7	−0·1	......	......	......	+0 50·1	......	8·0	+15 27 2·3
	....	+55·6	....										
	(e) Sun South L.	57·9	65·1	−0·4	341 6 1·1	+0·4	47·5	30·07	54·2	+0 51·0	......	......	+14 55 15·5
	α Orionis...............	40·8	43·5	−0·5	348 38 41·7	......	50·0	30·03	54·0	+1 6·0	7·6	......	+ 7 22 20·3
	α Canis Majoris	16·5	19·9	−0·4	12 29 17·8	......	49·0	30·03	54·1	+3 2·2	9·6	......	−16 30 12·0
	α Geminorum follow.	33·8	40·0	0·0	323 47 36·9	......	48·5	30·02	54·0	+0 25·7	7·9	......	+32 14 5·4
	γ Cephei S.P.	22·7	28·8	+0·1	252 47 25·8	......	46·0	30·03	51·5	−1 3·7	6·7	......	+76 44 14·1
	β Leonis	27·1	32·9	−0·4	340 33 29·6	......	......	......	......	+0 50·2	7·9	......	+15 27 48·2
	α Cassiopeæ S.P......	2·4	7·1	+0·1	231 44 4·9	......	46·0	30·02	51·2	−2 27·1	8·1	......	+55 39 29·8
	12 Canum Venat. R.	32·7	31·2	+0·4	103 18 32·4	......	......	......	......	−0 17·7	8·6	......	+39 10 53·1
	α Ursæ Minoris S.P.	10·5	15·4	+0·2	264 30 13·1	......	......	......	......	−0 42·1	7·2	......	+88 27 23·0
	η Ursæ Majoris S.P.	6·8	7·6	+0·5	114 14 7·7	......	......	......	......	−0 6·0	8·8	......	+50 6 40·1
	(f) Jupiter North L.	29·0	32·0	−0·4	10 50 30·1	0·0	......	......	......	+2 47·3	......	......	−14 51 9·4
	(c) Jupiter South L.	12·4	16·2	−0·4	10 51 13·9	−0·4	45·2	30·03	50·1	+2 47·3	......	......	−14 51 52·8
	α Ursæ Minoris	17·8	23·5	+0·2	267 35 20·8	......	......	......	......	−0 37·0	7·4	......	+88 27 24·2
	Mercury Centre	55·0	59·0	−0·5	352 19 56·5	......	51·0	29·98	52·8	+1 15·0	......	......	+ 3 40 56·5
	(c) Venus Centre.........	12·4	17·2	−0·5	349 47 14·3	+0·5	......	......	......	+1 8·4	......	......	+ 6 13 44·8
May 2	(g) Sun South L.	3·3	10·8	−0·4	340 48 7·1	0·0	......	......	......	+0 49·7	......	8·9	+15 13 12·1
		+ 0·4	....										
	(h) Sun North L.	19·0	25·1	−0·4	340 16 21·6	+0·4	53·4	29·96	53·4	+0 48·8	......	......	+15 44 58·1
	α Persei	41·0	47·1	+0·4	306 44 44·5	......	......	......	......	+0 6·8	7·7	......	+49 17 17·6
	α Tauri..................	18·8	24·2	−0·4	339 50 21·1	......	55·1	29·95	54·5	+0 47·9	9·6	......	+16 10 59·9
	β Tauri..................	32·2	38·1	−0·1	327 33 35·1	......	56·0	″......	......	+0 29·9	9·3	......	+28 28 3·9
	12 Canum Venat. R.	33·2	31·4	+0·4	103 18 32·7	......	49·0	29·92	52·8	−0 17·6	8·8	......	+39 10 52·6
	α Ursæ Minoris S.P.	12·1	16·5	+0·2	264 30 14·5	......	......	......	......	−0 41·7	9·3	......	+88 27 23·9
	η Ursæ Majoris R. ...	6·9	8·0	+0·5	114 14 8·0	......	......	......	......	−0 6·0	8·8	......	+50 6 39·5
	(f) Jupiter South L.	1·6	4·0	−0·4	10 49 2·4	0·0	......	......	......	+2 45·7	......	......	−14 49 39·2
	(c) Jupiter North L.	17·8	21·1	−0·4	10 48 19·1	−0·4	47·2	29·92	51·0	+2 45·7	......	......	−14 48 55·5
	α Persei S.P.	53·4	58·0	+0·1	225 22 55·8	......	......	......	......	−3 30·6	......	......	+49 17 16·3
	Vesta	44·5	48·0	−0·5	6 39 45·8	......	47·0	29·92	51·0	+2 14·2	......	......	−10 39 51·1
May 17	12 Canum Venat. ...	51·5	56·8	+0·2	316 50 54·3	......	43·2	29·17	46·9	+0 17·3	7·2	7·7	+39 10 56·1
	(i) α Ursæ Minoris S.P.	8·1	13·0	+0·2	264 30 10·7	−0·4	......	......	......	−0 41·1	8·9	......	+88 27 21·5
May 18	β Ursæ Minoris	58·6	66·0	+0·4	281 14 2·7	......	37·7	29·76	43·5	−0 20·3	8·4	......	+74 48 25·3
	(c) β Libræ	35·1	38·2	−0·5	4 47 36·2	−0·4	......	......	......	+2 5·0	6·4	......	− 8 47 33·1
	α Coronæ Borealis ...	23·0	27·1	−0·1	328 46 24·9	......	......	......	......	+0 32·4	7·8	......	+27 15 10·4
	Vesta	32·0	34·2	−0·5	6 25 32·6	......	36·9	29·76	42·0	+2 14·9	......	......	−10 25 39·8
May 19	(k) Sun North L.	46·4	51·2	−0·3	335 54 48·5	0·0	......	......	......	+0 42·2	......	7·9	+20 6 37·2
	(l) Sun South L.	20·2	26·5	−0·3	336 26 23·0	+0·8	46·0	29·83	45·8	+0 43·0	......	......	+19 35 1·1
	α Coronæ Borealis ...	22·3	27·6	−0·1	328 46 24·8	......	47·0	29·74	47·6	+0 31·8	7·3	.....	+27 15 11·3
	Venus Centre.........	53·5	59·2	−0·4	341 54 56·0	......	46·9	29·77	46·9	+0 52·1	......	......	+14 6 19·8

(a) At 1^h 3^m 0^s.
(b) At 2^h 31^m 15^s.
(c) At Wire V.

(d) At 2^h 35^m 0^s.
(e) At 2^h 36^m 10^s.
(f) At Wire I.

(g) At 2^h 38^m 52^s.
(h) At 2^h 40^m 6^s.
(i) At 13^h 4^m 15^s.

(k) At 3^h 45^m 4^s.
(l) At 3^h 46^m 26^s.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
May 20	(a) Sun South L.	48·2	53·5	−0·3	336 13 50·6	+ 0·4	......	......	......	+0 42·4	......	......	+19 47 34·5
	(b) Sun North L.	11·8	16·5	−0·3	335 42 13·8	+ 0·3	48·5	29·78	47·8	+0 41·6	......	......	+20 19 12·2
	α Canis Majoris	14·0	18·0	−0·4	12 29 15·6	......	49·4	29·78	48·5	+3 0·5	8·0	......	−16 30 8·2
	α Canis Minoris	7·8	12·7	−0·5	350 23 9·8	......	47·5	29·80	48·5	+1 10·0	9·0	......	+ 5 37 48·1
	(c) α Ursæ Minoris S.P.	23·8	29·2	+0·2	264 30 26·7	−16·4	41·0	29·86	46·6	−0 42·3	8·4	......	+88 27 20·1
	η Ursæ Majoris	14·2	21·0	+0·4	305 55 18·0	......	......	......	......	+0 6·0	8·0	......	+50 6 43·9
	(d) Jupiter North L.	8·8	12·1	−0·4	10 10 10·0	0·0	......	......	......	+2 42·2	......	......	−14 10 44·3
	(e) Jupiter South L.	50·3	54·1	−0·4	10 10 51·8	− 0·4	40·0	29·88	42·3	+2 42·2	......	......	−14 11 25·7
	(f) β Ursæ Minoris R.	27·8	28·1	+0·2	138 55 28·1	− 0·3	......	......	......	+0 20·2	7·8	......	+74 48 26·5
	α Persei S.P.	54·2	59·0	+0·1	225 22 56·7	......	......	......	......	−3 33·7	......	......	+49 17 15·1
	Vesta	28·4	31·5	−0·5	6 25 29·4	......	39·1	29·87	43·2	+2 14·6	......	......	−10 25 36·1
	Mercury Centre	43·1	48·8	−0·4	343 37 45·6	......	47·9	29·96	47·1	+0 55·5	......	......	+12 23 26·8
	Venus Centre	9·8	15·0	−0·4	341 31 12·0	......	......	......	......	+0 51·6	......	......	+14 30 4·3
	(g) α Persei	43·0	48·5	+0·4	306 44 46·2	+ 0·1	......	......	......	+0 6·8	6·7	......	+49 17 14·8
May 21	(h) Sun North L.	57·9	62·7	−0·3	335 30 0·0	+ 0·4	......	......	......	+0 41·3	......	7·4	+20 31 25·7
	(i) Sun South L.	36·0	39·9	−0·3	336 1 37·6	+ 0·5	50·6	29·96	48·5	+0 42·2	......	......	+19 59 47·1
	α Orionis	39·4	44·8	−0·5	348 38 41·6	......	51·2	29·97	49·5	+1 5·7	8·3	......	+ 7 22 20·1
	(g) α Canis Majoris	12·9	16·0	−0·4	12 29 14·1	− 0·2	52·0	29·96	50·0	+3 0·6	6·6	......	−16 30 7·1
May 23	(g) 12 Canum Venat.	51·8	58·0	+0·2	316 50 55·1	+ 0·1	49·5	29·72	50·8	+0 17·4	9·2	8·8	+39 10 56·2
	α Ursæ Minoris S.P.	7·0	11·9	+0·2	264 30 9·6	......	......	......	......	−0 41·4	9·0	......	+88 27 19·4
	ζ Ursæ Majoris	23·1	28·5	+0·5	300 16 26·3	......	......	......	......	+0 0·2	......	......	+55 45 42·3
	α Bootis	31·5	36·7	−0·3	336 0 33·8	......	48·9	29·72	49·4	+0 41·9	8·1	......	+20 0 53·1
May 24	α Persei	43·5	49·9	+0·4	306 44 47·1	......	49·4	29·00	50·8	+0 6·6	6·8	7·7	+49 17 14·0
May 25	(k) Sun South L.	6·5	12·0	−0·3	335 16 8·9	+ 0·4	......	......	......	+0 39·7	......	......	+20 45 18·7
	(l) Sun North L.	29·0	33·8	−0·3	334 44 31·1	+ 0·7	50·6	29·02	51·0	+0 38·9	......	......	+21 16 57·0
	(m) α Ursæ Minoris S.P.	12·6	17·5	+0·2	264 30 15·2	− 6·3	46·0	29·42	48·8	−0 41·2	8·8	......	+88 27 20·0
	(g) α Virginis	41·7	46·6	−0·5	6 19 43·7	− 0·1	......	......	......	+2 10·2	7·9	......	−10 19 46·1
	η Ursæ Majoris	14·0	19·7	+0·4	305 55 17·2	......	......	......	......	+0 5·7	8·0	......	+50 6 44·8
	(n) Jupiter South L.	24·5	27·9	−0·4	10 1 25·8	0·0	......	......	......	+2 37·3	......	......	−14 1 55·4
	(e) Jupiter North L.	41·9	45·1	−0·4	10 0 43·1	− 0·4	43·7	29·44	45·0	+2 37·3	......	......	−14 1 12·3
	β Ursæ Minoris R.	28·4	28·5	+0·2	138 55 28·6	......	......	......	......	+0 19·8	6·8	......	+74 48 27·1
	α Persei S.P.	49·2	53·9	+0·1	225 22 51·7	......	......	......	......	−3 28·6	......	......	+49 17 15·4
	Vesta	32·0	35·1	−0·5	6 27 33·1	......	42·6	29·42	44·4	+2 11·9	......	......	−10 27 37·3
May 26	α Geminorum follow.	35·5	40·1	0·0	323 47 37·8	......	52·0	29·36	50·7	+0 25·0	7·2	7·6	+32 14 4·8
	α Canis Minoris	7·9	12·9	−0·5	350 23 9·9	......	......	......	......	+1 8·3	7·8	......	+ 5 37 49·4
	β Geminorum	5·0	11·1	−0·1	327 37 7·9	......	......	......	......	+0 29·6	7·6	......	+28 24 30·1
	12 Canum Venat.	49·9	56·6	+0·2	316 50 53·4	......	46·4	29·46	49·1	+0 17·4	7·9	......	+39 10 56·8
	α Ursæ Minoris S.P.	4·9	11·0	+0·2	264 30 8·1	......	......	......	......	−0 41·2	......	......	+88 27 19·3
	(o)	12·5	18·0	+0·2	264 30 15·4	− 7·3	......	......	......	−0 41·2	7·7	......	+88 27 19·3
	(p)	32·8	37·9	+0·2	264 30 35·5	−28·5	......	......	......	−0 41·2	......	......	+88 27 18·2
	(n) Jupiter North L.	53·5	57·3	−0·5	9 58 54·9	0·0	......	......	......	+2 36·9	......	......	−13 59 24·2
	(e) Jupiter South L.	35·7	38·9	−0·5	9 59 36·8	− 0·4	44·9	29·49	47·7	+2 36·9	......	......	−14 0 5·7
	β Ursæ Minoris R.	28·5	30·0	+0·2	138 55 29·4	......	......	......	......	+0 19·8	7·3	......	+74 48 28·0
	α Persei S.P.	49·0	54·1	+0·1	225 22 51·7	......	......	......	......	−3 28·5	......	......	+49 17 15·6
	Vesta	19·6	22·1	−0·5	6 28 20·4	......	44·0	29·49	45·7	+2 11·9	......	......	−10 28 24·7
	ζ Ursæ Minoris	39·0	43·9	+0·3	277 45 41·7	......	......	......	......	−0 23·8	8·4	......	+78 16 49·7
	η Draconis R.	41·2	42·8	+0·4	125 59 42·4	......	......	......	......	+0 6·0	6·9	......	+61 52 27·2
	∗ R.A. 16^h 40^m 18^s	20·5	25·5	−0·5	352 59 22·5	......	......	......	......	+1 16·5	......	......	+ 3 1 28·6
	ι Ursæ Minoris	24·0	30·1	+0·3	273 45 27·3	......	......	......	......	−0 28·8	7·2	......	+82 17 9·1
	α Aurigæ S.P.	24·2	27·0	0·0	221 56 25·6	......	......	......	......	−4 30·0	......	......	+45 49 48·0
	Saturn Centre	10·0	15·0	−0·3	17 27 12·2	......	43·2	29·51	44·5	+4 13·8	......	......	−21 29 18·4

(a) At 3^h 48^m 40^s.
(b) At 3^h 50^m 3^s.
(c) At 13^h 19^m 25^s.
(d) At Wire II.
(e) At Wire V.
(f) At 14^h 52^m 20^s.
(g) At Wire IV.
(h) At 3^h 52^m 45^s.
(i) At 3^h 54^m 10^s.
(k) At 4^h 8^m 56^s.
(l) At 4^h 10^m 30^s.
(m) At 13^h 12^m 50^s.
(n) At Wire I.
(o) On Wire IV. at 13^h 13^m 29^s.
(p) On Wire V. at 13^h 24^m 57^s.

Date.	OBJECT OBSERVED.	Microscope. I.	Microscope. II.	Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point observed.	Equatorial Point adopted.	Apparent Declination observed.
		"	"	"	° ′ "	"	°	In.	°	′ "	"	"	° ′ "
May 27	Sun South L.	29·2	32·2	−0·3	334 55 30·4	......	51·9	29·55	50·9	+0 39·8	......	7·9	+21 5 57·7
May 28	α Geminorum follow.	34·1	40·0	0·0	323 47 37·1	......	55·0	29·34	53·6	+0 24·8	6·2	......	+32 14 6·0
	(a) α Canis Minoris	8·8	14·5	−0·5	350 23 11·1	− 0·1	......	......	......	+1 7·9	8·5	......	+ 5 37 49·0
	(b) ζ Ursæ Minoris	37·1	43·2	+0·3	277 45 40·4	+ 0·1	46·0	29·39	47·1	−0 23·6	8·0	......	+78 16 51·0
	η Draconis R.	43·7	46·0	+0·4	125 59 45·3	......	......	......	......	+0 6·0	9·1	......	+61 52 29·8
	∗ R.A. $16^h 40^m 18^s$	23·0	28·5	−0·5	352 59 25·3	......	......	......	......	+1 16·0	......	......	+ 3 1 26·6
	ε Ursæ Minoris	23·3	30·0	+0·3	273 45 26·9	......	......	......	......	−0 28·5	7·8	......	+82 17 9·5
	α Aurigæ S.P.	19·2	23·4	0·0	221 56 21·3	......	......	......	......	−4 27·9	......	......	+45 49 45·5
	Saturn Centre	34·1	38·7	−0·3	17 26 36·1	......	45·3	29·41	46·4	+4 11·7	......	......	−21 28 39·9
	Venus Centre	50·5	56·0	−0·3	338 34 53·0	......	......	......	......	+0 45·5	......	......	+17 26 29·4
	Mercury Centre	47·5	53·5	−0·3	338 29 50·2	......	53·5	29·67	52·0	+C 45·4	......	......	+17 31 32·3
May 29	(c) Sun North L.	49·5	53·8	−0·2	334 4 51·5	+ 0·2	54·5	29·70	53·6	+0 38·6	......	7·0	+21 56 36·7
	α Aurigæ	6·7	12·0	+0·4	310 12 9·7	......	......	......	......	+0 10·2	7·1	......	+45 49 47·1
	(d) β Tauri	31·0	36·4	−0·1	327 33 33·6	+ 0·5	55·0	......	......	+0 29·7	6·8	......	+28 28 3·2
	$α^2$ Libræ	55·0	60·4	−0·4	11 21 57·3	......	48·8	29·87	50·1	+2 50·0	6·0	......	−15 22 40·3
	β Ursæ Minoris R.	28·8	30·9	+0·2	138 55 30·0	......	......	......	......	+0 19·9	7·2	......	+74 48 29·3
	Vesta	24·8	28·5	−0·5	6 31 26·1	......	48·5	29·88	49·6	+2 14·8	......	......	−10 31 33·9
	ζ Ursæ Minoris	37·0	43·2	+0·3	277 45 40·4	......	......	......	......	−0 23·9	7·9	......	+78 16 50·5
	(e) η Draconis R.	42·9	44·3	+0·4	125 59 44·0	− 0·3	......	......	......	+0 6·0	7·2	......	+61 52 29·1
	(a) ∗ R. A. $16^h 40^m 18^s$	19·9	25·8	−0·5	352 59 22·4	− 0·1	......	......	......	+1 16·8	......	......	+ 3 1 27·9
	α Aurigæ S.P.	22·8	26·4	0·0	221 56 24·6	......	......	......	......	−4 31·1	......	......	+45 49 46·5
	Saturn Centre	14·0	19·8	−0·3	17 26 16·6	......	47·0	29·87	48·5	+4 14·5	......	......	−21 28 24·1
May 30	(f) ε Ursæ Minoris	22·0	28·7	+0·3	273 45 25·6	+ 0·5	......	......	......	−0 28·9	7·2	7·4	+82 17 10·2
	(g) α Aurigæ S.P.	14·7	19·7	0·0	221 56 17·2	− 0·1	......	......	......	−4 23·8	......	......	+45 49 45·9
	α Herculis	48·2	53·8	−0·4	341 26 50·6	......	57·9	29·73	57·7	+0 50·0	7·5	......	+14 34 26·8
	(g) Saturn Centre	2·7	8·5	−0·3	17 26 5·3	0·0	......	......	......	+4 7·8	......	......	−21 28 5·7
June 1	12 Canum Venat.	48·1	54·4	+0·2	316 50 51·4	......	......	......	......	+0 17·3	6·7	7·5	+39 10 58·8
	(h) α Ursæ Minoris S.P.	11·0	16·0	+0·2	264 30 13·7	− 6·3	52·8	29·64	55·0	−0 41·0	8·4	......	+88 27 18·9
	η Bootis	24·9	30·8	−0·3	336 49 27·6	......	52·0	29·63	53·5	+0 42·8	7·3	......	+19 11 57·1
	(c) Venus Centre	50·0	57·8	−0·3	337 16 53·6	+ 0·5	54·0	29·48	53·9	+0 43·1	......	......	+18 44 30·3
	Mercury Centre	1·0	8·0	−0·3	336 1 4·2	......	......	......	......	+0 41·2	......	......	+20 0 22·1
June 2	(i) Sun North L.	8·0	12·6	−0·2	333 31 10·1	+ 0·4	......	......	......	+0 37·4	......	7·5	+22 30 19·6
	(c) Sun South L.	40·7	45·3	−0·2	334 2 42·8	+ 0·2	55·8	29·48	54·9	+0 38·1	......	......	+21 58 46·4
	θ Ursæ Majoris	44·0	50·9	+0·4	303 37 47·9	......	55·0	29·44	55·7	+0 3·5	8·8	......	+52 24 16·1
	ε Leonis	1·1	7·7	−0·2	331 31 4·2	......	55·0	......	......	+0 34·6	7·1	......	+24 30 28·7
	(k) 12 Canum Venat.	48·2	54·0	+0·2	316 50 51·3	+ 0·7	......	......	......	+0 17·2	7·3	......	+39 10 58·3
	(l) α Ursæ Minoris S.P.	8·2	14·8	+0·2	264 30 11·7	− 5·7	51·0	29·50	53·7	−0 40·9	......	......	+88 27 17·6
	(m)	3·8	9·5	+0·2	264 30 6·8	......	......	......	......	−0 40·9	7·1	......	+88 27 18·4
	(n)	9·8	16·0	+0·2	264 30 13·1	− 7·3	......	......	......	−0 40·9	......	......	+88 27 17·4
	(o)	31·1	36·5	+0·2	264 30 34·0	−28·6	......	......	......	−0 40·9	......	......	+88 27 17·0
	(a) Jupiter Centre	37·8	41·6	−0·5	9 47 39·2	− 0·2	49·0	29·50	50·3	+2 34·1	......	......	−13 48 5·6
	β Ursæ Minoris R.	30·3	31·7	+0·2	138 55 31·2	......	......	......	......	+0 19·6	7·0	......	+74 48 29·7
	Vesta	32·7	36·5	−0·5	6 37 34·1	......	48·8	29·52	50·0	+2 11·7	......	......	−10 37 38·3
	Saturn Centre	5·6	10·3	−0·3	17 25 7·6	......	48·1	29·56	49·3	+4 10·9	......	......	−21 27 11·0
	Mercury Centre	10·2	15·0	−0·3	335 26 12·3	......	54·7	29·75	53·5	+0 40·6	......	......	+20 35 14·6
June 3	(i) Sun South L.	15·3	20·2	−0·2	333 55 17·5	+ 0·4	......	......	......	+0 38·3	......	7·4	+22 6 11·2
	(c) Sun North L.	42·5	47·9	−0·2	333 23 45·0	+ 0·2	55·8	29·75	54·7	+0 37·5	......	......	+22 37 44·7
	α Hydræ	24·3	30·9	−0·5	3 58 27·1	......	58·9	29·78	57·3	+1 55·4	7·0	......	− 7 58 15·1
	12 Canum Venat.	48·6	55·0	+0·2	316 50 52·0	......	......	......	......	+0 17·4	7·6	......	+39 10 58·0
	(p) α Ursæ Minoris S.P.	9·6	15·8	+0·2	264 30 12·9	− 6·3	......	......	......	−0 41·3	......	......	+88 27 17·9

(a) At Wire IV.
(b) At $15^h 51^m 0^s$.
(c) At Wire V.
(d) At $5^h 17^m 35^s$.
(e) At $16^h 22^m 50^s$.
(f) At $17^h 2^m 0^s$.
(g) At Wire II.
(h) On Wire II. at $12^h 51^m 13^s$.
(i) At Wire I.
(k) At $12^h 50^m 5^s$.
(l) At $12^h 51^m 35^s$.
(m) At $13^h 2^m 30^s$.
(n) On Wire IV. at $13^h 13^m 45^s$.
(o) On Wire V. at $13^h 25^m 13^s$.
(p) On Wire II. at $12^h 51^m 18^s$.

Date.	OBJECT OBSERVED.	Microscope. I.	Microscope. II.	Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point observed.	Equatorial Point adopted.	Apparent Declination observed.
		"	"	"	° ′ "	"	°	In.	°	′ "	"	"	° ′ "
June 3	α Ursæ Minoris S.P.	3·9	9·8	+0·2	264 30 7·0	......	......	......	......	−0 41·3	7·4	7·4	+88 27 18·3
	(a)	10·6	16·2	+0·2	264 30 13·6	− 7·3	......	......	......	−0 41·3	......	......	+88 27 17·6
	(b)	31·8	36·7	+0·2	264 30 34·4	−28·5	52·2	29·82	55·1	−0 41·3	......	......	+88 27 17·2
	α Virginis	41·3	45·7	−0·5	6 19 43·0	......	......	......	......	+2 10·4	7·7	......	−10 19 46·0
	ε Ursæ Minoris	20·6	28·2	+0·3	273 45 24·7	......	47·0	29·81	48·5	−0 28·8	7·2	......	+82 17 11·5
	Saturn Centre.........	41·0	45·0	−0·3	17 24 42·7	......	......	......	......	+4 13·6	......	......	−21 26 48·9
June 28	(c) ζ Ursæ Minoris	27·9	33·7	+0·3	277 45 31·1	+ 1·1	50·9	29·76	55·4	−0 23·7	8·0	8·2	+78 16 59·7
	δ Ophiuchi	18·4	24·8	−0·6	359 17 21·0	......	......	......	......	+1 36·4	7·8	......	− 3 16 49·2
	η Draconis R.	52·0	53·0	+0·4	125 59 52·9	......	......	......	......	+0 6·0	7·5	......	+61 52 37·1
	ε Ursæ Minoris	15·5	21·4	+0·3	273 45 18·7	......	......	......	......	−0 28·6	9·1	......	+82 17 18·1
	α Aurigæ S.P.	17·4	21·0	0·0	221 56 19·2	......	......	......	......	−4 27·7	......	......	+45 49 43·3
	(d) α Herculis	42·4	47·5	−0·4	341 26 44·5	0·0	51·0	29·74	52·9	+0 50·7	7·8	......	+14 34 33·0
	β Draconis R.	40·8	41·9	+0·5	116 32 41·9	......	......	......	......	−0 3·6	8·5	......	+52 25 16·5
	(d) Piazzi XVII. 177 ...	24·0	28·0	−0·6	353 53 25·4	− 0·1	......	......	......	+1 18·6	......	......	+ 2 7 24·3
	γ Draconis R.	58·8	59·4	+0·5	115 37 59·6	......	......	......	......	−0 4·5	8·9	......	+51 30 33·3
June 29	(e) Sun North L.	35·5	39·3	−0·2	332 31 37·2	+ 0·7	......	......	......	+0 36·2	......	......	+23 29 54·1
	(f) Sun South L.	5·5	10·8	−0·2	333 3 8·0	0·0	56·9	29·68	56·4	+0 36·9	......	......	+22 58 23·3
June 30	α Coronæ Borealis ...	14·8	22·3	−0·1	328 45 18·4	......	53·3	29·45	56·5	+0 31·1	8·8	8·2	+27 16 18·7
	α Serpentis	10·0	16·5	−0·5	349 5 12·7	......	......	......	......	+1 5·3	7·3	......	+ 6 55 50·2
	ζ Ursæ Minoris	27·8	34·0	+0·3	277 45 31·2	......	......	......	......	−0 23·4	7·7	......	+78 17 0·4
	η Draconis R.	52·2	55·0	+0·4	125 59 54·0	......	52·2	29·46	54·8	+0 5·9	8·0	......	+61 52 38·1
	(d) Saturn Centre	1·9	6·1	−0·3	17 17 3·7	− 0·2	51·3	29·46	52·9	+4 5·8	......	......	−21 19 1·1
	(d) β Draconis R.	42·0	43·2	+0·5	116 32 43·1	− 0·3	......	......	......	−0 3·5	8·9	......	+52 25 17·5
	Piazzi XVII. 177 ...	23·0	27·2	−0·6	353 53 24·5	......	......	......	......	+1 17·8	......	......	+ 2 7 25·9
	γ Draconis R.	59·0	60·6	+0·5	115 38 0·3	......	......	......	......	−0 4·4	9·1	......	+51 30 34·1
	δ Ursæ Minoris	12·8	19·0	+0·2	269 27 16·1	......	......	......	......	−0 33·8	7·4	......	+86 35 25·9
	(g) 51 (Hev.) Cephei S.P.	38·8	44·0	+0·2	263 18 41·6	− 0·8	50·0	29·44	51·7	−0 42·7	8·1	......	+87 15 49·9
July 1	ι Ursæ Majoris	57·7	64·8	+0·4	307 22 1·6	......	51·9	29·30	55·2	+0 7·2	8·2	8·6	+48 39 59·8
	α Hydræ	25·0	29·7	−0·5	3 58 26·9	......	......	......	......	+1 55·1	9·2	......	− 7 58 13·4
	(d) θ Ursæ Majoris	47·0	54·5	+0·4	303 37 51·2	+ 0·1	53·0	29·32	55·0	+0 3·5	8·7	......	+52 24 13·8
	α Lyræ R.	53·4	55·3	+0·4	102 45 54·7	......	51·7	29·39	53·8	−0 17·8	8·4	......	+38 38 14·7
July 3	Venus Centre	26·9	32·4	−0·2	332 24 29·5	......	55·5	29·33	55·4	+0 35·6	......	......	+23 37 3·5
July 4	(h) Sun South L.	50·5	55·3	−0·2	333 24 52·7	+ 0·6	......	......	......	+0 37·0	......	7·3	+22 36 37·0
	(i) Sun North L.	22·2	27·0	−0·2	332 53 24·4	0·0	55·6	29·33	55·4	+0 36·3	......	......	+23 8 6·6
	Mercury Centre	39·8	45·1	−0·3	335 46 42·1	......	56·5	29·32	56·0	+0 40·4	......	......	+20 14 44·8
July 6	(k) δ Ursæ Minoris	9·2	17·3	+0·2	269 27 13·4	0·0	......	......	......	−0 33·3	7·2	......	+86 35 27·2
	α Lyræ.........	31·6	36·0	+0·2	317 23 34·0	......	50·0	28·98	53·4	+0 17·6	8·0	......	+38 38 15·7
	β Lyræ	51·9	58·0	+0·1	322 50 55·0	......	......	......	......	+0 23·6	6·6	......	+33 10 48·7
July 7	α Hydræ	25·3	31·0	−0·5	3 58 27·7	......	57·5	29·15	55·3	+1 53·4	9·0	8·3	− 7 58 12·8
	(l) γ Ursæ Majoris	55·0	62·0	+0·5	301 26 59·0	+ 0·2	58·0	29·19	57·5	+0 1·3	7·8	......	+54 35 7·8
	η Bootis	22·2	28·9	−0·3	336 49 25·3	......	56·2	29·21	56·8	+0 41·8	7·8	......	+19 12 1·2
	(m) ζ Ursæ Minoris	25·8	32·2	+0·3	277 45 29·3	+ 0·7	53·5	29·23	55·6	−0 23·2	8·0	......	+78 17 1·5
	β Draconis R.	43·8	45·0	+0·5	116 32 44·9	......	......	......	......	−0 3·5	8·9	......	+52 25 19·5
	(d) Piazzi XVII. 177 ...	23·6	28·3	−0·6	353 53 25·4	− 0·1	51·8	29·24	53·2	+1 17·2	......	......	+ 2 7 25·8
	γ Draconis R.	1·0	2·6	+0·5	115 38 2·3	......	......	......	......	−0 4·4	8·9	......	+51 30 36·0
	(n) δ Ursæ Minoris	9·9	17·1	+0·2	269 27 13·7	+ 0·8	......	......	......	−0 33·6	8·3	......	+86 35 27·4
	α Lyræ R.	54·0	56·5	+0·4	102 45 55·6	......	50·5	29·24	52·5	−0 17·7	7·6	......	+38 38 16·0

(a) On Wire IV. at 13^h 13^m 45^s.
(b) On Wire V. at 13^h 25^m 12^s.
(c) At 15^h 53^m 0^s.
(d) At Wire IV.

(e) At Wire I.
(f) At 6^h 35^m 40^s.
(g) At 18^h 26^m 20^s.

(h) At 6^h 54^m 2^s.
(i) At 6^h 55^m 22^s.
(k) At 18^h 24^m 40^s.

(l) 15^s before transit.
(m) At 15^h 51^m 45^s.
(n) At 18^h 21^m 50^s.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
July 8	Venus Centre	29·8	35·2	−0·2	332 40 32·3	......	57·1	29·43	56·7	+0 36·0	......	7·4	+23 20 59·1
July 9	(a) Sun North L.	1·4	6·9	−0·2	333 25 3·9	+0·6	......	......	......	+0 37·5	......	......	+22 36 25·4
	β Libræ	37·0	42·0	−0·5	4 47 39·0	......	53·0	29·50	55·0	+2 0·0	6·9	......	− 8 47 31·6
	α Coronæ Borealis	13·0	19·3	−0·1	328 46 16·0	......	......	......	......	+0 31·2	7·8	......	+27 15 20·2
	α Serpentis	8·6	15·1	−0·5	349 5 11·3	......	......	......	......	+1 5·4	6·9	......	+ 6 55 50·7
	β Draconis R.	43·8	45·0	+0·5	116 32 44·9	......	49·8	29·49	52·5	−0 3·5	8·3	......	+52 25 20·4
	51 (Hev.) Cephei S.P.	34·8	40·2	+0·2	263 18 37·7	......	......	......	......	−0 42·9	7·2	......	+87 15 47·4
	(b) δ Ursæ Minoris	9·7	17·0	+0·2	269 27 13·5	+0·1	48·2	29·48	50·3	−0 34·0	7·6	......	+86 35 27·8
	Venus Centre	47·0	54·1	−0·2	332 45 50·3	......	53·7	29·53	54·8	+0 36·5	......	......	+23 16 40·6
July 10	(c) Sun North L.	29·4	34·8	−0·2	333 32 31·9	+0·8	......	......	......	+0 37·5	......	9·2	+22 28 59·0
	(d) Sun South L.	1·2	6·2	−0·2	334 4 3·5	−0·2	55·7	......	......	+0 38·2	......	......	+21 57 27·7
	α Coronæ Borealis	14·8	22·0	−0·1	328 46 18·3	......	51·4	29·58	54·2	+0 31·4	10·4	......	+27 15 19·5
	α Serpentis	9·0	16·0	−0·5	349 5 12·0	......	......	......	......	+1 5·8	8·1	......	+ 6 55 51·4
	(e) Moon North L.	6·9	13·1	−0·2	22 57 9·8	−5·6	51·5	29·58	54·0	+7 9·1	......	......	−27 2 4·1
	Venus Centre	46·5	53·3	−0·2	332 51 49·7	......	54·9	29·62	54·8	+0 36·7	......	......	+23 9 42·8
July 11	Sun South L.	53·6	58·9	−0·2	334 11 56·0	......	54·9	......	......	+0 38·6	......	......	+21 49 34·6
July 13	Sun North L.	17·1	23·0	−0·2	333 57 19·8	......	55·7	29·78	54·8	+0 38·4	......	8·6	+22 4 10·4
	η Draconis	29·0	35·9	+0·5	294 9 33·0	......	55·0	29·86	55·8	−0 6·0	8·4	......	+61 52 41·6
	(f) Saturn Centre	23·0	28·0	−0·3	17 14 25·2	−0·4	......	......	......	+4 6·3	......	......	−21 16 22·5
	(g) ε Ursæ Minoris	9·9	17·3	+0·3	273 45 13·9	+0·1	......	......	......	−0 28·4	8·5	......	+82 17 23·0
	(h) β Draconis	40·0	46·6	+0·4	303 36 43·7	+0·3	54·7	29·86	55·1	+0 3·6	7·8	......	+52 25 21·0
	γ Draconis R.	3·9	4·8	+0·5	115 38 4·9	......	......	......	......	−0 4·5	9·6	......	+51 30 38·2
	(i) 51 (Hev.) Cephei S.P.	36·0	41·7	+0·2	263 18 39·1	−0·6	......	......	......	−0 43·2	8·9	......	+87 15 46·7
	(k) δ Ursæ Minoris	9·3	16·4	+0·2	269 27 13·0	+0·1	51·5	29·86	53·9	−0 34·2	8·1	......	+86 35 29·7
	Pallas	17·8	23·0	−0·2	334 28 20·2	......	......	......	......	+0 39·6	......	......	+21 33 8·8
July 15	Sun South L.	7·8	14·4	−0·3	334 47 10·8	......	62·2	29·62	59·2	+0 38·9	......	7·5	+21 14 17·8
	(d) β Draconis	38·9	45·5	+0·4	303 36 42·6	+0·6	54·6	29·61	56·0	+0 3·5	7·8	......	+52 25 20·8
	γ Draconis R.	3·1	4·8	+0·5	115 38 4·5	......	......	......	......	−0 4·4	8·8	......	+51 30 39·0
	δ Ursæ Minoris	7·5	15·1	+0·2	269 27 11·5	......	......	......	......	−0 33·9	7·4	......	+86 35 29·9
	(l) 51 (Hev.) Cephei S.P.	32·9	39·5	+0·2	263 18 36·4	−0·9	......	......	......	−0 42·7	7·0	......	+87 15 45·3
	(m) Pallas	28·1	33·0	−0·3	334 40 30·2	−0·1	53·0	29·63	56·0	+0 39·4	......	......	+21 20 58·0
	β Lyræ	48·7	54·9	+0·1	322 50 51·9	......	......	......	......	+0 24·0	6·5	......	+33 10 51·6
	ζ Aquilæ	22·1	27·8	−0·4	342 23 24·6	......	......	......	......	+0 52·0	7·0	......	+13 37 50·9
	(d) ⁎ R. A. $19^h\ 7^m\ 3^s$	39·0	45·0	−0·6	359 23 41·4	−0·3	53·0	29·62	54·9	+1 36·1	......	......	− 3 23 9·7
	π Capricorni	25·6	30·5	−0·4	14 42 27·6	......	......	......	......	+3 25·0	......	......	−18 43 45·1
	(n) λ Ursæ Minoris	59·2	66·1	+0·2	267 13 2·9	0·0	52·4	29·62	53·6	−0 37·0	8·2	......	+88 49 41·6
	(o) υ Capricorni	22·0	26·6	−0·4	14 40 23·9	−1·0	......	......	......	+3 24·6	......	......	−18 41 40·0
July 16	(c) Sun South L.	54·1	58·6	−0·3	334 56 56·0	+0·8	......	......	......	+0 39·2	......	7·8	+21 4 31·8
	(p) Sun North L.	23·8	29·7	−0·2	334 25 26·5	0·0	59·3	29·53	58·4	+0 38·5	......	......	+21 36 2·8
	(q) Mercury Centre	40·0	46·7	−0·4	341 54 43·0	−1·0	60·7	29·50	......	+0 50·2	......	......	+14 6 35·6
	δ Ophiuchi	19·8	25·8	−0·6	359 17 22·2	......	53·0	29·47	55·6	+1 35·2	9·2	......	− 3 16 49·6
	(d) η Draconis	26·0	34·0	+0·5	294 9 30·5	+1·0	......	......	......	−0 5·9	7·6	......	+61 52 42·2
	Saturn Centre	58·0	62·7	−0·3	17 14 0·1	......	......	......	......	+4 4·6	......	......	−21 15 56·9
	α Herculis	38·2	44·1	−0·4	341 26 40·7	......	52·0	29·46	53·4	+0 50·1	6·4	......	+14 34 37·0
	γ Draconis	22·2	27·7	+0·4	304 31 25·3	......	......	......	......	+0 4·4	7·7	......	+51 30 38·1
	(r) δ Ursæ Minoris	6·1	13·8	+0·2	269 27 10·1	+1·5	......	......	......	−0 33·8	7·9	......	+86 35 30·0
	51 (Hev.) Cephei S.P.	32·9	39·5	+0·2	263 18 36·4	......	50·9	29·43	52·4	−0 42·6	8·4	......	+87 15 46·0
	λ Ursæ Minoris	58·0	65·0	+0·2	267 13 1·7	......	51·0	29·41	52·5	−0 36·8	7·5	......	+88 49 42·9
	(d) 29 Capricorni	59·3	64·8	−0·4	11 49 1·7	−0·5	51·2	29·42	52·4	+2 50·9	......	......	−15 49 44·3

(a) At $7^h\ 14^m\ 40^s$.
(b) At $18^h\ 25^m\ 40^s$.
(c) At Wire I.
(d) At Wire V.
(e) At $16^h\ 14^m\ 40^s$.
(f) 30^s after transit.
(g) At $17^h\ 3^m\ 40^s$.
(h) At Wire II.
(i) At $18^h\ 21^m\ 5^s$.
(k) At $18^h\ 25^m\ 10^s$.
(l) At $18^h\ 26^m\ 40^s$.
(m) On Wire V. at $18^h\ 34^m\ 51^s$.
(n) At $20^h\ 23^m\ 10^s$.
(o) At $20^h\ 32^m\ 30^s$.
(p) At $7^h\ 44^m\ 45^s$.
(q) 50^s after transit.
(r) At $18^h\ 21^m\ 0^s$.

Date.	OBJECT OBSERVED.	Microscope. I.	Microscope. II.	Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point observed.	Equatorial Point adopted.	Apparent Declination observed.
		″	″	″	° ′ ″	″	°	In.	″	′ ″	″	″	° ′ ″
July 17	(a) η Draconis	26·5	33·2	+0·5	294 9 30·4	+0·5	51·4	29·31	54·3	−0 5·9	7·2	7·4	+61 52 42·4
	Saturn Centre	50·8	55·9	−0·3	17 13 53·1	......	51·3	29·30	53·0	+4 3·6	......	......	−21 15 49·3
	α Herculis	39·4	44·0	−0·4	341 26 41·3	......	......	......	......	+0 50·0	7·1	......	+14 34 36·1
	β Lyræ	49·9	55·0	+0·1	322 50 52·5	......	50·1	29·30	51·6	+0 23·9	7·6	......	+33 10 51·0
July 18	Sun North L.	57·1	62·6	−0·3	334 45 59·5	......	59·0	29·36	56·0	+0 38·8	......	......	+21 15 29·1
July 20	Sun South L.	25·9	30·8	−0·3	335 39 28·1	......	57·5	29·00	57·2	+0 39·7	......	......	+20 21 59·6
	η Draconis	26·7	34·0	+0·5	294 9 30·9	......	55·1	29·06	57·5	−0 5·8	7·9	......	+61 52 42·3
July 22	Sun North L.	18·5	22·5	−0·3	335 31 20·2	......	54·0	29·44	55·2	+0 40·4	......	7·9	+20 30 7·3
July 24	γ Draconis	19·8	26·0	+0·4	304 31 23·3	......	53·0	29·41	54·2	+0 4·4	6·9	......	+51 30 40·2
	(b) δ Ursæ Minoris	6·0	14·3	+0·2	269 27 10·3	+0·6	......	......	......	−0 33·6	9·8	......	+86 35 30·6
	(c) Pallas	45·8	51·4	−0·3	335 26 48·3	−0·2	......	......	......	+0 40·4	......	......	+20 34 39·4
	α Lyræ	25·1	32·0	+0·2	317 23 28·8	......	......	......	......	+0 17·7	8·0	......	+38 38 21·4
	β Lyræ	46·1	53·8	+0·1	322 50 50·0	......	52·0	29·42	53·6	+0 23·9	6·8	......	+33 10 54·0
	⁎ R. A. 19h 7m 3s.	40·9	47·0	−0·6	359 23 43·4	......	51·7	......	......	+1 35·7	......	......	− 3 23 11·2
July 25	Sun South L.	25·5	33·0	−0·3	336 40 28·9	......	56·9	29·37	55·9	+0 41·7	......	8·4	+19 20 57·8
	(d) ε Ursæ Minoris	4·7	14·2	+0·3	273 45 9·7	0·0	55·5	29·42	56·4	−0 28·0	7·1	......	+82 17 26·7
	β Draconis	37·7	45·5	+0·4	303 36 42·0	......	......	......	......	+0 3·5	9·1	......	+52 25 22·9
	(c) γ Draconis	19·5	27·0	+0·4	304 31 23·6	+0·6	......	......	......	+0 4·4	9·1	......	+51 30 39·8
July 26	(e) α Ursæ Minoris S.P.	6·9	15·2	+0·2	264 30 11·2	−1·8	58·1	29·57	58·0	−0 40·4	9·0	8·4	+88 27 20·6
July 27	Sun North L.	35·6	44·0	−0·3	336 35 39·5	......	65·2	29·52	59·6	+0 41·2	......	......	+19 25 47·7
	α Ursæ Majoris	20·9	30·5	+0·5	293 25 26·2	......	64·7	29·52	62·0	−0 6·5	8·0	......	+62 36 48·7
	γ Ursæ Majoris	57·5	67·0	+0·5	301 27 2·7	......	......	......	......	+3 1·3	8·7	......	+54 35 4·4
	(f) α Ursæ Minoris S.P.	3·7	11·9	+0·2	264 30 8·0	−0·2	......	......	......	−0 39·8	7·8	......	+88 27 19·6
July 28	(f) α Ursæ Minoris S.P.	5·0	12·9	+0·2	264 30 9·1	−0·2	62·1	29·73	61·4	−0 40·3	8·2	8·2	+88 27 20·4
	(g) λ Ursæ Minoris	54·6	63·0	+0·2	267 12 59·0	0·0	51·5	29·82	55·0	−0 37·3	8·6	......	+88 49 46·5
	(h) ι Ursæ Majoris S.P.	37·1	43·5	0·0	224 45 40·3	−0·4	51·0	......	......	−3 37·0	8·6	......	+48 39 54·7
	α Cephei	31·0	39·0	+0·5	294 7 35·5	......	......	......	......	−0 6·0	7·3	......	+61 54 38·7
July 29	Sun South L.	6·3	15·0	−0·3	337 35 10·3	......	58·5	29·86	57·7	+0 43·7	......	8·7	+18 26 14·7
	(i) Saturn Centre	52·8	59·9	−0·3	17 12 56·1	−0·8	......	......	......	+4 5·8	......	......	−21 14 52·4
	ε Ursæ Minoris	6·0	14·8	+0·3	273 45 10·7	......	54·8	29·81	56·0	−0 28·4	8·5	......	+82 17 26·4
	(k) γ Draconis	16·9	23·9	+0·4	304 31 20·8	+1·3	......	......	......	+0 4·5	8·1	......	+51 30 42·1
	(l) δ Ursæ Minoris	59·6	69·0	+0·2	269 27 4·5	+4·4	53·2	29·79	54·5	−0 34·0	8·8	......	+86 35 33·8
	(m) 51 (Hev.) Cephei SP.	28·8	37·7	+0·2	263 18 33·5	−0·1	......	......	......	−0 43·0	8·4	......	+87 15 41·7
	α Aquilæ	56·3	63·0	−0·5	347 33 59·2	......	53·0	29·77	54·2	+1 2·6	9·8	......	+ 8 27 6·9
July 30	Sun North L.	59·5	68·2	−0·3	337 18 3·6	......	60·7	29·61	59·3	+0 42·7	......	9·3	+18 43 23·0
	(n) α Ursæ Minoris S.P.	5·3	14·2	+0·2	264 30 9·9	−0·5	59·1	29·62	58·7	−0 40·4	8·2	......	+88 27 19·7
	(o) Pallas	15·1	23·3	−0·3	336 40 18·9	−0·1	......	......	......	+0 42·7	......	......	+19 21 7·8
	(p) δ Ursæ Minoris	58·0	67·0	+0·2	269 27 2·7	+5·2	51·0	29·70	53·7	−0 34·1	7·9	......	+86 35 35·5
	γ Aquilæ	20·9	27·0	−0·5	345 47 23·4	......	......	......	......	+0 59·0	9·9	......	+10 13 46·9
	α Aquilæ	56·0	62·8	−0·5	347 33 58·9	......	......	......	......	+1 2·8	9·9	......	+ 8 27 7·6
	β Aquilæ	10·5	17·0	−0·5	350 0 13·2	......	50·5	29·70	52·3	+1 8·4	10·5	......	+ 6 0 47·7
July 31	Sun South L.	20·2	27·5	−0·3	338 4 23·6	......	58·1	29·79	57·8	+0 44·4	......	......	+17 57 1·3
Aug. 1	Sun North L.	51·8	60·2	−0·3	337 47 55·7	......	62·9	29·81	61·4	+0 43·6	......	8·4	+18 13 29·1
	(q) α Ursæ Minoris S.P.	5·7	14·0	+0·2	264 30 10·0	−0·2	64·2	29·76	62·2	−0 40·2	8·4	......	+88 27 21·2

(a) At 16h 23m 15s.
(b) At 18h 22m 35s.
(c) At Wire V.
(d) At 17h 3m 45s.

(e) At 12h 56m 50s.
(f) At 13h 1m 0s.
(g) At 20h 23m 0s.
(h) At 20h 49m 35s.

(i) Faint; 50s after transit.
(k) At 17h 54m 54s.
(l) At 18h 18m 35s.
(m) At 18h 23m 0s.

(n) At 13h 0m 0s.
(o) On Wire IV. at 18h 24m 42s
(p) At 18h 31m 30s.
(q) At 13h 4m 40s.

Date.	Object Observed.	Microscope. I.	Microscope. II.	Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point observed.	Equatorial Point adopted.	Apparent Declination observed.
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Aug. 1	η Draconis	24·4	33·7	+0·5	294 9 29·6	……	58·1	29·75	59·5	−0 5·9	8·3	8·4	+61 52 44·7
	(a) ε Ursæ Minoris	3·9	14·1	+0·3	273 45 9·3	+0·1	……	……	……	−0 28·2	7·9	……	+82 17 27·2
	(b) β Draconis	33·4	43·4	+0·4	303 36 38·8	+1·2	57·7	29·74	58·4	+0 3·5	8·6	……	+52 25 24·9
	(c) Pallas	30·9	39·2	−0·3	336 59 34·8	+0·1	……	……	……	+0 42·8	……	……	+19 1 50·7
	(d) δ Ursæ Minoris	57·2	67·0	+0·2	269 27 2·3	+5·6	57·0	29·73	57·9	−0 33·7	8·9	……	+86 35 34·2
Aug. 3	Sun South L.	24·5	31·5	−0·4	338 50 27·6	……	63 3	29·70	61·2	+0 45·0	……	9·2	+17 10 56·6
	α Ursæ Majoris	24·0	33·2	+0·5	293 25 29·1	……	65·0	29·73	62·8	−0 6·6	9·1	……	+62 36 46·7
	γ Ursæ Majoris	59·9	69·7	+0·5	301 27 5·3	……	……	……	……	+0 1·3	10·0	……	+54 35 2·6
	γ Draconis	18·7	26·4	+0·4	304 31 22·9	……	59·0	29·80	59·7	+0 4·4	9·9	……	+51 30 41·9
	(e) 51 (Hev.) Cephei S.P.	29·8	39·0	+0·2	263 18 34·6	−3·4	58·2	29·79	59·3	−0 42·5	8·0	……	+87 15 39·5
Aug. 4	(f) Sun North L.	45·2	51·9	−0·3	338 34 48·3	−0·4	59·8	29·86	58·9	+0 45·2	……	8·2	+17 26 35·1
	α Ursæ Minoris S.P.	6·0	14·8	+0·2	264 30 10·6	……	63·0	29·86	61·9	−0 40·4	8·3	……	+88 27 22·0
	ε Ursæ Minoris	3·0	13·4	+0·3	273 45 8·5	……	……	……	……	−0 28·1	7·6	……	+82 17 27·8
	α Herculis	36·0	44·0	−0·4	341 26 39·6	……	60·0	29·86	60·7	+0 50·0	7·8	……	+14 34 38·6
	β Draconis R.	50·6	52·2	+0·5	116 32 51·9	……	……	……	……	−0 3·5	9·1	……	+52 25 26·6
	α Lyræ	21·7	30·1	+0·2	317 23 26·1	……	59·6	29·86	60·1	+0 17·7	8·0	……	+38 38 24·4
Aug. 5	(g) Sun South L.	29·1	37·1	−0·4	339 22 32·7	−0·1	56·0	29·85	59·0	+0 46·9	……	8·8	+16 38 49·3
	ε Ursæ Minoris	3·9	12·8	+0·3	273 45 8·6	……	56·1	29·82	59·3	−0 28·3	7·6	……	+82 17 28·5
	(b) β Draconis	33·8	43·0	+0·4	303 36 38·8	+1·2	……	……	……	+0 3·5	9·4	……	+52 25 25·3
	γ Draconis	17·0	25·3	+0·4	304 31 21·5	……	……	……	……	+0 4·4	8·9	……	+51 30 42·9
	(h) Pallas	45·3	54·2	−0·3	337 39 49·5	+0·3	……	……	……	+0 44·1	……	……	+18 21 34·9
	(i) 51 (Hev.) Cephei S.P.	31·5	40·3	+0·2	263 18 36·1	−3·7	55·0	29·83	57·5	−0 42·8	9·4	……	+87 15 40·8
	⁎ R.A. $19^h 7^m 3^s$	38·8	45·3	−0·6	359 23 41·5	……	54·0	29·83	57·2	+1 36·6	……	……	− 3 23 9·3
Aug. 6	Sun North L.	24·0	30·0	−0·4	339 7 26·6	……	60·6	29·79	59·8	+0 45·9	……	8·6	+16 53 56·1
	γ Ursæ Majoris	59·8	69·0	+0·5	301 27 4·9	……	……	……	……	+0 1·4	9·1	……	+54 35 2·3
	α Ursæ Minoris S.P.	5·9	13·5	+0·2	264 30 9·9	……	69·3	29·76	63·7	−0 39·8	7·8	……	+88 27 21·5
	Moon North L.	38·3	43·7	−0·2	22 13 40·8	……	65·9	29·78	63·9	+6 24·1	……	……	−26 17 56·3
	η Draconis	24·0	32·2	+0·5	294 9 28·6	……	65·0	……	……	−0 5·8	8·0	……	+61 52 45·8
	γ Draconis	16·2	24·9	+0·4	304 31 20·9	……	61·0	……	……	+0 4·4	8·6	……	+51 30 43·3
	(k) Pallas	13·3	22·0	−0·3	337 50 17·3	+0·3	……	……	……	+0 44·0	……	……	+18 11 7·0
	(l) δ Ursæ Minoris	58·0	68·5	+0·2	269 27 3·4	+3·8	58·4	29·80	61·6	−0 33·7	9·5	……	+86 35 35·1
Aug. 7	(m) Sun North L.	58·5 + 8·5	64·9 ····	−0·4	339 24 9·8	+0·7	……	……	……	+0 46·4	……	……	+16 37 11·7
	(n) Sun South L.	44·3	51·2	−0·4	339 55 47·3	−0·3	59·9	29·80	61·0	+0 47·3	……	……	+16 5 34·3
Aug. 8	(h) Sun South L.	46·0 − 3·7	54·0 ····	−0·4	340 12 45·9	+0·4	……	……	……	+0 47·3	……	9·3	+15 48 35·7
	(f) Sun North L.	7·8	16·9	−0·4	339 41 11·9	−0·5	66·9	29·91	62·5	+0 46·4	……	……	+16 20 11·5
	α Ursæ Minoris S.P.	6·0	14·0	+0·2	264 30 10·2	……	70·5	29·91	66·8	−0 39·9	7·6	……	+88 27 21·0
	(o) β Draconis	34·7	43·4	+0·4	303 36 39·4	+0·9	65·6	29·94	65·4	+0 3·5	10·3	……	+52 25 25·5
	(p) Moon North L.	41·1	45·0	−0·2	24 33 42·9	−0·3	65·0	……	……	+8 46·7	……	……	−28 40 20·0
	(q) Pallas	25·9	34·0	−0·3	338 11 29·6	+0·1	……	……	……	+0 44·4	……	……	+17 49 55·2
	(r) 51 (Hev.) Cephei S.P.	29·5	37·0	+0·2	263 18 33·5	−3·3	64·0	29·95	64·4	−0 42·3	8·4	……	+87 15 38·6
	α Aquilæ	55·4	62·5	−0·5	347 33 58·5	……	……	……	……	+1 1·8	9·9	……	+ 8 27 9·0
	β Aquilæ	9·5	17·0	−0·5	350 0 12·7	……	62·7	29·95	63·2	+1 7·3	10·2	……	+ 6 0 49·3
Aug. 11	(f) Sun South L.	13·5	22·0	−0·4	341 5 17·3	−0·5	60·8	29·15	60·0	+0 48·1	……	8·6	+14 56 3·7
	γ Ursæ Majoris	1·3	10·0	+0·5	301 27 6 1	……	62·2	……	……	+0 1·3	9·1	……	+54 35 1·2
	α Ursæ Minoris S.P.	7·9	15·5	+0·2	264 30 11·9	……	62·0	29·13	62·0	−0 39·5	8·9	……	+88 27 23·8
	ζ Ursæ Majoris	17·5	26·4	+0·5	300 16 22·4	……	……	……	……	+0 0·2	……	……	+55 45 46·0
	η Ursæ Majoris	7·5	16·3	+0·4	305 55 12·3	……	61·0	29·14	61·8	+0 5·7	7·9	……	+50 6 50·6

(a) At $17^h 4^m 15^s$.
(b) At Wire I.
(c) At $18^h 24^m 45^s$.
(d) At $18^h 31^m 46^s$.
(e) At $18^h 30^m 20^s$.

(f) At Wire V.
(g) 15^s after transit.
(h) At Wire II.
(i) At $18^h 30^m 40^s$.
(k) On Wire II. at $18^h 20^m 46^s$.

(l) At $18^h 30^m 26^s$.
(m) At $9^h 10^m 0^s$.
(n) At $9^h 11^m 0^s$.
(o) At $17^h 26^m 50^s$.

(p) At $17^h 44^m 32^s$; limb a little deficient, corr. = −0·8″.
(q) On Wire IV. at $18^h 20^m 35·5^s$.
(r) At $18^h 30^m 15^s$.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		"	"	"	° ′ "	"	°	In.	°	′ "	"	"	° ′ "
Aug. 12	γ Aquilæ	20·1	27·9	−0·5	345 47 23·5	……	……	……	……	+0 57·6	10·7	9·4	+10 13 48·3
	α Aquilæ	53·6	62·1	−0·5	347 33 57·4	……	51·3	29·05	54·4	+1 1·3	8·9	……	+ 8 27 10·7
	β Aquilæ	8·8	16·5	−0·5	350 0 12·1	……	……	……	……	+1 6·8	9·6	……	+ 6 0 50·5
	λ Ursæ Minoris	50·0	57·8	+0·2	267 12 54·1	……	……	……	……	−0 36·4	9·7	……	+88 49 51·7
	α Cygni R.	24·0	25·3	+0·5	108 50 25·1	……	50·4	29·06	54·0	−0 11·2	8·3	……	+44 42 50·9
	μ Aquarii	36·9	44·3	−0·5	5 34 40·1	……	……	……	……	+2 3·2	……	……	− 9 34 33·9
	(a) Moon South L.	53·6	61·1	−0·4	13 52 57·0	−7·6	……	……	……	+3 11·6	……	……	−17 53 51·6
	(b) ……	36·0	44·0	−0·4	13 52 39·6	+8·9	50·1	29·06	52·7	+3 11·6	……	……	−17 53 50·7
Aug. 13	(c) Venus Centre	7·6	16·3	−0·4	341 53 11·6	−1·4	58·7	29·09	58·2	+0 49·6	……	9·2	+14 8 9·4
	(d) α Ursæ Minoris S.P.	8·2	16·2	+0·2	264 30 12·4	−0·1	58·5	29·10	58·4	−0 39·8	8·5	……	+88 27 23·3
	β Cephei	33·8	44·1	+0·4	286 10 39·3	……	53·0	29·11	56·5	−0 13·9	8·6	……	+69 51 43·8
	(e) α Aquarii	4·3	10·7	−0·6	357 6 6·9	+0·3	……	……	……	+1 26·4	10·6	……	− 1 5 24·4
	(f) ι Aquarii	43·5	51·0	−0·4	10 37 46·9	−0·6	53·0	29·10	56·0	+2 37·6	……	……	−14 38 14·7
Aug. 14	(g) Sun North L.	24·9 − 7·4	32·0 ····	−0·4	341 28 20·7	+1·2	……	……	……	+0 48·8	……	9·0	+14 32 58·3
	(h) Sun South L.	56·0	64·3	−0·4	341 59 59·7	−0·2	59·5	29·07	58·0	+0 49·7	……	……	+14 1 19·8
	α Ursæ Minoris S.P.	8·2	16·2	+0·2	264 30 12·4	……	59·7	29·08	59·2	−0 39·6	8·5	……	+88 27 23·8
	(i) ζ Ursæ Majoris	17·7	25·1	+0·5	300 16 21·9	+0·8	……	……	……	+0 0·2	……	……	+55 45 46·1
Aug. 15	γ Draconis	16·5	22·7	+0·4	304 31 20·0	……	54·5	29·43	56·5	+0 4·4	9·4	……	+51 30 44·6
Aug. 18	Venus Centre	26·3	33·3	−0·5	344 1 29·3	……	57·8	29·12	57·0	+0 53·6	……	8·2	+11 59 45·3
	α Ursæ Minoris S.P.	9·5	16·7	+0·2	264 30 13·3	……	58·8	29·19	57·5	−0 39·9	8·0	……	+88 27 25·2
	ζ Ursæ Majoris	19·6	28·5	+0·5	300 16 24·5	……	……	……	……	+0 0·2	……	……	+55 45 43·5
	η Ursæ Majoris	8·5	17·5	+0·4	305 55 13·4	……	……	……	……	+0 5·7	8·2	……	+50 6 49·1
	η Bootis	21·0	30·0	−0·3	336 49 25·2	……	58·2	29·19	57·9	+0 41·6	8·3	……	+19 12 1·4
Aug. 19	δ Ursæ Minoris	58·0	67·2	+0·2	269 27 2·8	……	……	……	……	−0 33·5	8·1	8·3	+86 35 39·0
	(k) 51 (Hev.) Cephei S.P.	24·8	32·9	+0·2	263 18 29·1	−1·1	……	……	……	−0 42·2	8·6	……	+87 15 37·5
	α Lyræ	19·0	26·8	+0·2	317 23 23·1	……	56·3	29·45	57·4	+0 17·6	8·1	……	+38 38 27·6
Aug. 20	(l) λ Ursæ Minoris	42·9	50·0	+0·2	267 12 46·7	+2·8	65·5	29·53	62·9	−0 35·9	8·2	8·5	+88 49 54·9
	α Cygni	58·0	67·0	+0·3	311 19 2·8	……	……	……	……	+0 11·0	8·3	……	+44 42 54·7
	α Tauri	10·4	18·0	−0·4	339 50 13·8	……	61·0	29·51	60·7	+0 46·6	8·9	……	+16 11 8·1
Aug. 21	Sun North L.	36·0	45·7	−0·4	343 43 40·5	……	70·0	29·48	62·8	+0 52·4	……	8·3	+12 17 35·4
	Venus Centre	26·1	34·0	−0·5	345 22 29·5	……	71·7	……	……	+0 55·3	……	……	+10 38 43·5
	α Ursæ Majoris	26·5	35·9	+0·5	293 25 31·7	……	……	……	……	−0 6·4	6·8	……	+62 36 43·0
	γ Aquilæ	18·5	26·1	−0·5	345 47 21·8	……	……	……	……	+0 57·3	9·9	……	+10 13 49·2
	(m) α Aquilæ	53·1	60·1	−0·5	347 33 56·1	−0·1	……	……	……	+1 1·0	8·4	……	+ 8 27 11·3
	β Aquilæ	8·2	15·7	−0·5	350 0 11·4	……	61·0	29·47	61·7	+1 6·5	9·7	……	+ 6 0 50·4
	λ Ursæ Minoris	45·7	53·5	+0·2	267 12 49·8	……	……	……	……	−0 36·4	8·4	……	+88 49 54·9
	α Cygni R.	27·0	28·2	+0·5	108 50 28·1	……	……	……	……	−0 11·2	8·5	……	+44 42 55·0
	(n) ι Ursæ Majoris S.P.	24·0	30·2	0·0	224 45 27·1	0·0	58·5	29·48	60·5	−3 31·5	6·3	……	+48 39 47·3
Aug. 22	ε Bootis	29·3	38·2	−0·1	328 16 33·6	……	58·0	29·47	59·3	+0 30·2	7·5	7·4	+27 45 3·6
	β Ursæ Minoris	46·7	56·1	+0·4	281 13 51·8	……	……	……	……	−0 19·2	8·6	……	+74 48 34·8
	(o) δ Ursæ Minoris	54·8	65·0	+0·2	269 27 0·1	+0·9	……	……	……	−0 33·5	6·9	……	+86 35 39·9
	α Lyræ R.	5·2	7·0	+0·4	102 46 6·5	……	56·9	29·50	59·3	−0 17·6	7·4	……	+38 38 27·9
	β Lyræ	38·9	45·8	+0·1	322 50 42·4	……	……	……	……	+0 23·7	5·4	……	+33 11 1·3
	λ Ursæ Minoris	47·0	54·1	+0·2	267 12 50·8	……	54·8	29·49	57·0	−0 36·7	9·4	……	+88 49 53·3
	α Cygni R.	27·0	27·9	+0·5	108 50 27·9	……	……	……	……	−0 11·3	7·9	……	+44 42 55·6
	ι Ursæ Majoris S.P.	26·1	31·4	0·0	224 45 28·7	……	54·9	……	……	−3 33·2	6·4	……	+48 39 48·1

(a) At $21^h\ 18^m\ 19^s$.
(b) At $21^h\ 19^m\ 41^s$.
(c) At $9^h\ 56^m\ 56^s$.
(d) At $13^h\ 2^m\ 0^s$.

(e) At Wire I.
(f) At $21^h\ 59^m\ 35^s$.
(g) At $9^h\ 36^m\ 20^s$.
(h) At $9^h\ 37^m\ 20^s$.

(i) At Wire V.
(k) At $18^h\ 27^m\ 25^s$.
(l) At $20^h\ 30^m\ 30^s$.

(m) At Wire IV.
(n) 10^s after transit.
(o) At $18^h\ 21^m\ 35^s$.

Date.	OBJECT OBSERVED.	Microscope.		Correc-tion.	Mean Reading of Circle.	Reduc-tion to Meri-dian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		"	"	"	° ′ "	"	°	In.	°	′ "	"	"	° ′ "
Aug. 24	(a) Sun South L.	19·9	27·7	−0·5	345 16 23·3	− 1·0	58·5	29·55	58·6	+0 56·8	......	8·2	+10 44 49·1
	(b) Venus Centre	1·9	9·7	−0·5	346 46 5·3	− 1·1	59·4	......	......	+0 59·7	......	......	+ 9 15 4·3
	α Ursæ Majoris	30·1	37·5	+0·5	293 25 34·3	......	......	......	......	−0 6·6	8·3	......	+62 36 40·5
	(c) α Ursæ Minoris S.P.	13·1	21·1	+0·2	264 30 17·3	− 1·9	59·8	29·56	60·0	−0 40·3	7·9	......	+88 27 26·9
	ζ Ursæ Majoris	22·0	29·5	+0·5	300 16 26·2	......	......	......	......	+0 0·2	......	......	+55 45 41·8
	(d) 51 (Hev.) Cephei S.P.	23·8	31·9	+0·2	263 18 28·1	− 0·1	......	......	......	−0 42·6	9·0	......	+87 15 37·2
	α Lyræ R.	6·9	10·0	+0·4	102 46 8·8	......	54·9	29·60	57·9	−0 17·8	9·2	......	+38 38 29·2
	(e) β Lyræ	39·7	46·0	+0·1	322 50 42·9	0·0	......	......	......	+0 23·9	6·4	......	+33 11 1·4
	(f) λ Ursæ Minoris	45·0	52·5	+0·2	267 12 49·0	+ 0·3	55·0	29·59	56·9	−0 36·8	8·4	......	+88 49 55·7
	α Cygni R.	27·5	29·0	+0·5	108 50 28·7	......	......	......	......	−0 11·3	8·2	......	+44 42 55·6
Aug. 26	Sun North L.	10·9	18·0	−0·5	345 26 13·9	......	59·1	29·67	57·5	+0 57·2	......	8·1	+10 34 57·0
	α Ursæ Majoris	30·5	38·4	+0·5	293 25 34·9	......	......	......	......	−0 6·6	8·3	......	+62 36 39·8
	(g) α Ursæ Minoris S.P.	13·0	20·8	+0·2	264 30 17·1	− 0·1	62·9	29·64	58·9	−0 40·1	9·1	......	+88 27 28·8
	(h) ζ Ursæ Majoris	21·1	29·2	+0·5	300 16 25·6	0·0	......	......	......	+0 0·2	......	......	+55 45 42·3
	β Lyræ	39·6	46·5	+0·1	322 50 43·1	......	58·0	29·62	58·8	+0 23·8	6·9	......	+33 11 1·2
Aug. 28	Sun South L.	4·5	12·8	−0·5	346 40 8·1	......	54·8	29·77	58·0	+1 0·5	......	8·3	+ 9 20 59·7
	(i) δ Ursæ Minoris	57·7	65·9	+0·2	269 27 2·0	+ 0·4	......	......	......	−0 34·0	8·8	......	+86 35 39·9
	α Lyræ R.	7·9	11·9	+0·4	102 46 10·3	......	53·8	29·81	57·4	−0 17·9	9·9	......	+38 38 30·5
	β Lyræ	39·9	45·9	+0·1	322 50 43·0	......	......	......	......	+0 24·1	7·4	......	+33 11 1·2
	ζ Aquilæ	15·8	22·0	−0·4	342 23 18·5	......	......	......	......	+0 52·2	8·0	......	+13 37 57·6
	δ Aquilæ	38·9	45·7	−0·5	353 12 41·8	......	......	......	......	+1 16·5	7·8	......	+ 2 48 10·0
	(k) λ Ursæ Minoris	43·6	51·0	+0·2	267 12 47·5	0·0	53·0	29·82	56·4	−0 37·2	7·5	......	+88 49 58·0
	α Cygni R.	28·0	30·0	+0·5	108 50 29·5	......	......	......	......	−0 11·5	7·6	......	+44 42 56·1
	(l) ι Ursæ Majoris S.P.	28·0	33·5	0·0	224 45 30·7	0·0	......	......	......	−3 36·4	6·6	......	+48 39 46·0
	(m) 61¹ Cygni	27·5	34·7	+0·2	318 3 31·3	+ 0·9	......	......	......	+0 18·7	......	......	+37 58 17·4
	(e) 61² Cygni	32·0	38·0	+0·2	318 3 35·2	+ 0·1	......	......	......	+0 18·7	......	......	+37 58 14·3
	α Cephei R.	4·2	7·4	+0·4	126 2 6·2	......	......	......	......	+0 6·0	9·6	......	+61 54 50·3
	θ Ursæ Majoris S.P.	59·0	65·1	+0·1	228 29 2·2	......	......	......	......	−2 51·3	10·1	......	+52 24 2·6
	β Cephei R.	53·0	57·3	+0·3	133 58 55·5	......	53·0	29·82	56·9	+0 14·3	7·5	......	+69 51 47·9
Aug. 29	Sun North L.	43·5	49·5	−0·5	346 29 46·0	......	60·0	29·76	58·4	+0 59·5	......	7·7	+ 9 31 22·2
	(e) α Lyræ R.	6·9	10·0	+0·4	102 46 8·8	− 0·3	......	......	......	−0 17·6	8·3	......	+38 38 29·6
	(n) 51 (Hev.) Cephei S.P.	32·4	40·0	+0·2	263 18 36·4	−12·1	62·0	29·71	61·5	−0 42·1	6·7	......	+87 15 34·5
	β Lyræ	39·0	46·3	+0·1	322 50 42·7	......	......	......	......	+0 23·6	6·7	......	+33 11 1·4
	ζ Aquilæ	16·1	23·8	−0·4	342 23 19·6	......	......	......	......	+0 51·2	8·2	......	+13 37 56·9
	δ Aquilæ	40·5	46·9	−0·5	353 12 43·2	......	61·7	29·71	61·8	+1 15·0	7·8	......	+ 2 48 9·5
	λ Ursæ Minoris	43·8	51·0	+0·2	267 12 47·6	......	61·0	29·69	61·5	−0 36·5	8·6	......	+88 49 56·6
	α Cygni	55·8	64·2	+0·3	311 19 0·3	......	......	......	......	+0 11·2	8·6	......	+44 42 56·2
	ι Ursæ Majoris S.P.	23·9	29·9	0·0	224 45 26·9	......	......	......	......	−3 32·0	7·4	......	+48 39 47·2
	(m) 61² Cygni	30·1	37·4	+0·2	318 3 34·0	+ 0·9	......	......	......	+0 18·3	......	......	+37 58 14·5
	(e) 61¹ Cygni	28·3	35·9	+0·2	318 3 32·3	+ 0·1	......	......	......	+0 18·3	......	......	+37 58 17·0
	α Cephei R.	3·9	7·7	+0·4	126 2 6·2	......	......	......	......	+0 5·9	9·2	......	+61 54 50·8
	θ Ursæ Majoris S.P.	50·6	58·2	+0·1	228 28 54·5	......	......	......	......	−2 48·0	5·9	......	+52 23 58·8
	β Cephei R.	53·2	58·7	+0·3	133 58 56·3	......	60·5	29·69	61·0	+0 14·0	7·6	......	+69 51 49·0
Aug. 30	θ Ursæ Majoris	0·9	9·9	+0·4	303 38 5·8	......	54·7	30·00	57·0	+0 3·6	9·6	8·9	+52 23 59·5
	Mercury Centre	42·0	49·5	−0·4	341 26 45·3	......	......	......	......	+0 50·8	......	......	+14 34 32·8
Aug. 31	Sun South L.	32·5	39·0	−0·5	347 44 35·3	......	55·8	30·00	57·4	+1 3·2	......	......	+ 8 16 30·4
	α Ursæ Majoris	32·0	41·0	+0·5	293 25 37·0	......	......	......	......	−0 6·7	8·6	......	+62 36 38·6
	Venus Centre	11·5	19·5	−0·5	350 9 15·0	......	56·9	......	......	+1 8·6	......	......	+ 5 51 45·3
	γ Ursæ Majoris	6·0	15·0	+0·5	301 27 11·0	......	......	......	......	+0 1·4	9·0	......	+54 31 56·5
	α Ursæ Minoris S.P.	14·5	22·3	+0·2	264 30 18·6	......	57·8	29·97	58·7	−0 41·0	8·3	......	+88 27 28·7
	λ Ursæ Minoris	44·2	52·2	+0·2	267 12 48·4	......	53·0	29·96	57·0	−0 37·4	9·1	......	+88 49 57·9

(a) At 10ʰ 14ᵐ 50ˢ.
(b) 1ᵐ after transit.
(c) At 13ʰ 9ᵐ 10ˢ.
(d) At 18ʰ 22ᵐ 35ˢ.
(e) At Wire IV.
(f) At 20ʰ 25ᵐ 0ˢ.
(g) At 13ʰ 2ᵐ 20ˢ.
(h) 18ˢ after transit.
(i) At 18ʰ 22ᵐ 50ˢ.
(k) At 20ʰ 23ᵐ 0ˢ.
(l) 12ˢ after transit.
(m) At Wire I.
(n) At 18ʰ 35ᵐ 30ˢ.

Date.	Object Observed.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Aug. 31	(*a*) 61^1 Cygni	27·5	35·3	+0·2	318 3 31·6	+0·9	......	......	......	+ 0 18·8	......	8·9	+37 58 17·6
	(*b*) 61^2 Cygni	30·0	37·2	+0·2	318 3 33·8	+0·1	......	......	......	+ 0 18·8	......	......	+37 58 16·2
	α Cephei R.	4·8	8·0	+0·4	126 2 6·8	......	......	......	......	+ 0 6·0	9·2	......	+61 54 50·3
	θ Ursæ Majoris S.P.	57·5	65·1	+0·1	228 29 1·4	......	......	......	......	− 2 52·7	8·7	......	+52 23 59·8
	β Cephei R.	55·0	59·0	+0·3	133 58 57·3	......	51·5	29·95	56·0	+ 0 14·4	8·4	......	+69 51 49·2
	(*b*) Uranus	24·5	29·9	−0·5	1 11 26·7	−0·1	51·1	29·93	55·0	+ 1 44·7	......	......	− 5 11 2·4
	Mercury Centre	54·9	62·2	−0·4	341 29 58·2	......	58·1	29·83	57·6	+ 0 50·2	......	......	+14 31 20·5
Sept. 1	(*c*) Sun South L.	19·9 + 0·7	28·0	−0·5	348 6 24·1	+0·7	61·9	29·81	59·0	+ 1 2·7	......	8·6	+ 7 54 41·1
	Venus Centre	57·5	65·1	−0·5	350 39 0·8	......	60·9	.....	......	+ 1 8·8	......	......	+ 5 21 59·0
	ζ Cygni	54·1	62·5	0·0	326 26 58·3	......	56·9	29·53	58·5	+ 0 28·0	9·1	......	+29 34 42·3
	α Cephei R.	4·4	8·0	+0·4	126 2 6·6	......	......	......	......	+ 0 5·9	8·6	......	+61 54 50·3
	θ Ursæ Majoris S.P.	52·2	59·3	+0·1	228 28 55·9	......	......	......	......	− 2 48·3	6·0	......	+52 23 59·0
	ι Pegasi	8·5	16·3	−0·5	346 52 11·9	......	......	......	......	+ 1 0·1	10·2	......	+ 9 8 56·6
	α Aquarii	.0·1	7·4	−0·6	357 6 3·1	......	56·7	29·52	58·5	+ 1 27·0	9·0	......	− 1 5 21·5
	α Piscis Australis	59·5	67·0	−0·2	26 18 3·1	......	56·9	29·48	58·4	+11 50·9	......	......	−30 27 45·4
	Uranus	24·1	31·2	−0·5	1 12 27·1	......	56·2	......	......	+ 1 42·2	......	......	− 5 12 0·7
Sept. 2	(*d*) Sun North L.	29·8	36·9	−0·5	347 56 32·8	−0·7	56·0	29·18	58·6	+ 1 1·8	......	8·7	+ 8 4 34·8
	(*e*) λ Ursæ Minoris	36·4	42·9	+0·2	267 12 39·9	+6·0	56·8	29·08	58·7	− 0 36·0	8·5	......	+88 49 58·8
	α Cephei	18·5	27·4	+0·5	294 7 23·4	......	......	......	......	− 0 5·8	8·2	......	+61 54 51·1
	β Aquarii	23·0	29·6	−0·5	2 16 25·8	......	......	......	......	+ 1 45·3	9·6	......	− 6 16 2·4
	β Cephei	26·8	36·1	+0·4	286 10 31·8	......	56·4	29·10	58·4	− 0 13·8	8·5	......	+69 51 50·7
	Uranus	19·6	27·0	−0·5	1 13 22·8	......	56·0	29·10	58·0	+ 1 41·0	......	......	− 5 12 55·1
	Mercury Centre	30·0	36·2	−0·4	341 46 32·7	......	53·5	29·18	54·0	+ 0 50·1	......	......	+14 14 45·9
Sept. 3	(*a*) Sun South L.	18·1 − 3·1	25·5	−0·5	348 50 18·6	+0·9	......	......	......	+ 1 4·0	......	8·4	+ 7 10 44·9
	(*f*) Sun North L.	29·1	36·9	−0·5	348 18 32·5	−0·5	......	......	......	+ 1 2·9	......	......	+ 7 42 33·5
	α Ursæ Majoris	32·3	40·9	+0·5	293 25 37·1	......	54·3	29·19	54·8	− 0 6·6	7·7	......	+62 36 37·9
	(*b*) Venus Centre	59·5	66·0	−0·5	351 39 2·3	−0·5	54·9	......	......	+ 1 10·6	......	......	+ 4 21 56·0
	(*g*) α Ursæ Minoris S.P.	15·6	23·5	+0·2	264 30 19·7	−0·2	56·5	29·21	56·4	− 0 40·1	9·1	......	+88 27 31·0
	ζ Ursæ Majoris	23·9	31·7	+0·5	300 16 28·3	......	......	......	......	+ 0 0·2	......	......	+55 45 39·9
	η Ursæ Majoris	11·5	19·0	+0·4	305 55 15·6	......	56·1	29·22	56·9	+ 0 5·7	7·5	......	+50 6 47·1
	λ Ursæ Minoris	43·0	49·5	+0·2	267 12 46·5	......	46·8	29·27	53·7	− 0 37·0	8·4	......	+88 49 58·9
	(*a*) 61^2 Cygni	29·5	36·1	+0·2	318 3 33·0	+0·9	......	......	......	+ 0 18·6	......	......	+37 58 15·9
	(*b*) 61^1 Cygni	28·5	35·0	+0·2	318 3 32·0	+0·1	......	......	......	+ 0 18·6	......	......	+37 58 17·7
	α Cephei R.	5·7	9·0	+0·4	126 2 7·7	......	......	......	......	+ 0 6·0	9·1	......	+61 54 51·7
	β Cephei R.	56·5	61·0	+0·3	133 58 59·1	......	48·0	29·26	52·1	+ 0 14·1	8·8	......	+69 51 51·2
	Uranus	11·7	19·3	−0·5	1 14 15·0	......	46·6	29·24	51·9	+ 1 43·5	......	......	− 5 13 50·1
Sept. 4	(*h*) Ursæ Minoris S.P.	14·6	22·5	+0·2	264 30 18·7	−0·2	55·0	29·18	55·0	− 0 40·1	7·8	8·2	+88 27 30·2
	ζ Ursæ Majoris	23·6	31·0	+0·5	300 16 27·8	......	......	......	......	+ 0 0·2	......	......	+55 45 40·2
	α Ophiuchi	16·5	24·1	−0·4	343 20 19·9	......	52·2	29·25	54·9	+ 0 53·2	7·7	......	+12 40 55·1
	δ Aquilæ	38·9	45·5	−0·5	353 12 41·7	......	50·1	29·28	52·5	+ 1 15·7	7·4	......	+ 2 48 10·8
	λ Ursæ Minoris	42·0	48·5	+0·2	267 12 45·5	......	50·0	29·30	52·0	− 0 36·8	7·9	......	+88 49 59·5
	(*a*) 61^1 Cygni	25·9	32·5	+0·2	318 3 29·4	+0·9	......	......	......	+ 0 18·5	......	......	+37 58 19·4
	(*b*) 61^2 Cygni	28·9	36·1	+0·2	318 3 32·7	+0·1	......	......	......	+ 0 18·5	......	......	+37 58 16·9
	θ Ursæ Majoris S.P.	54·8	61·3	+0·1	228 28 58·2	......	49·3	29·33	52·4	− 2 49·7	9·5	......	+52 24 0·3
	α Piscis Australis	49·7	54·4	−0·2	26 17 51·9	......	48·7	29·36	50·5	+12 1·3	......	......	−30 27 45·0
	Uranus	7·9	15·0	−0·5	1 15 10·9	......	48·0	......	......	+ 1 43·6	......	......	− 5 14 46·3
	α Ursæ Majoris	34·1	42·0	+0·5	293 25 38·5	......	55·9	29·57	55·5	− 0 6·6	8·8	......	+62 36 36·3
Sept. 6	α Ursæ Majoris	35·0	42·2	+0·5	293 25 39·1	......	58·4	......	......	− 0 6·6	8·7	7·8	+62 36 35·3

(*a*) At Wire I.
(*b*) At Wire IV.
(*c*) 30^s before transit.
(*d*) At Wire V.
(*e*) At 20^h 34^m 30^s.
(*f*) 30^s after transit.
(*g*) At 13^h 1^m 50^s.
(*h*) At 13^h 2^m 0^s.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Sept. 7	Venus Centre	24·0	30·1	−0·6	353 40 26·4	......	59·5	29·60	58·5	+ 1 16·3	......	7·8	+ 2 21 25·1
	α Bootis	25·5	33·0	−0·3	336 0 28·9	......	56·0	29·62	57·0	+ 0 41·2	7·7	......	+20 0 57·7
	ε Bootis	30·5	38·0	−0·1	328 16 34·1	......	57·0	......	......	+ 0 30·4	7·1	......	+27 45 3·3
	(a) δ Aquilæ	38·7	45·1	−0·5	353 12 41·4	− 0·1	51·8	29·66	53·5	+ 1 16·4	7·9	......	+ 2 48 10·1
	57 Sagittarii	11·4	18·0	−0·4	15 25 14·3	......	......	......	......	+ 3 36·1	......	......	−19 26 42·6
	(b) Moon South L.	25·5	....	−0·3	20 2 28·4	− 9·8	......	......	......	+ 5 13·5	......	......	−24 5 24·3
	(c)	18·0	....	−0·3	20 2 20·9	+ 0·9	......	......	......	+ 5 13·5	......	......	−24 5 27·5
	(d)	8·4	14·9	−0·3	20 2 11·3	+ 6·7	51·0	29·65	52·8	+ 5 13·5	......	......	−24 5 23·7
	π Capricorni	24·1	29·1	−0·4	14 42 26·2	......	......	......	......	+ 3 25·8	......	......	−18 43 44·2
	λ Ursæ Minoris	42·1	49·0	+0·2	267 12 45·8	......	......	......	......	− 0 37·1	8·8	......	+88 49 59·1
	ι Capricorni	19·6	25·3	−0·4	14 40 22·0	......	......	......	......	+ 3 25·4	......	......	−18 41 39·6
	(e) 61² Cygni	28·4	35·0	+0·2	318 3 31·9	+ 0·3	......	......	......	+ 0 18·7	......	......	+37 58 16·9
	(f) 61¹ Cygni	27·0	33·8	+0·2	318 3 30·6	+ 0·3	50·8	29·66	52·4	+ 0 18·7	......	......	+37 58 18·2
	β Cephei R.	55·5	60·0	+0·3	133 58 58·1	......	......	......	......	+ 0 14·2	6·5	......	+69 51 50·9
	Uranus	56·1	63·7	−0·5	1 17 59·4	......	51·0	29·64	52·4	+ 1 44·3	......	......	− 5 17 35·9
Sept. 9	(g) ζ Ursæ Minoris	24·1	32·0	+0·3	277 45 28·3	+ 0·3	63·0	29·22	61·0	− 0 22·7	8·6	7·7	+78 17 1·8
	δ Aquilæ	40·3	47·0	−0·5	353 12 43·2	......	61·5	29·13	60·4	+ 1 13·6	7·1	......	+ 2 48 10·9
	α² Capricorni	41·0	47·5	−0·5	9 1 43·7	......	......	......	......	+ 2 23·6	6·6	......	−13 1 59·6
	(h) λ Ursæ Minoris	39·1	46·0	+0·2	267 12 42·8	+ 0·1	58·3	29·16	59·4	− 0 36·0	7·5	......	+88 50 0·8
	γ Capricorni	40·0	46·3	−0·4	13 21 42·7	......	54·0	29·22	57·5	+ 3 5·1	......	......	−17 22 40·1
	(i) Moon South L.	32·4	....	−0·4	10 45 36·0	− 8·8	......	......	......	+ 2 39·1	......	......	−14 45 58·6
	(k)	20·1	....	−0·4	10 45 23·7	+ 3·3	......	......	......	+ 2 39·1	......	......	−14 45 58·4
	(l)	11·0	19·0	−0·4	10 45 14·6	+11·8	......	......	......	+ 2 39·1	......	......	−14 45 57·8
	(f) σ Aquarii	11·0	18·0	−0·5	7 29 14·0	− 0·4	......	......	......	+ 2 15·3	......	......	−11 29 21·2
	α Piscis Australis	40·8	46·1	−0·2	26 17 43·3	......	51·0	29·25	54·6	+11 54·3	......	......	−30 27 29·9
	Uranus	49·5	57·7	−0·5	1 19 53·1	......	50·7	29·27	54·3	+ 1 43·2	......	......	− 5 19 28·6
	Mercury Centre	6·2	13·8	−0·5	344 26 9·5	......	53·4	29·42	53·8	+ 0 55·4	......	......	+11 35 2·8
	α Ursæ Majoris	35·4	44·0	+0·5	293 25 40·2	......	......	......	......	− 0 6·6	8·7	......	+62 36 34·1
Sept. 10	Sun North L.	38·4	44·2	−0·5	350 55 40·8	......	54·0	29·42	54·6	+ 1 9·5	......	8·9	+ 5 6 18·6
	γ Ursæ Majoris	10·6	18·5	+0·5	301 27 15·0	......	......	......	......	+ 0 1·4	10·0	......	+54 34 52·5
	Venus Centre	20·0	26·9	−0·6	355 12 22·8	......	53·9	29·43	54·9	+ 1 21·2	......	......	+ 0 48 24·9
	α Ursæ Minoris S.P.	18·0	25·8	+0·2	264 30 22·1	......	53·7	29·42	55·1	− 0 40·6	8·7	......	+88 27 32·6
	γ Draconis	13·2	20·5	+0·4	304 31 17·2	......	49·0	29·38	53·4	+ 0 4·4	9·7	......	+51 30 47·3
	(m) δ Ursæ Minoris	55·9	63·9	+0·2	269 27 0·1	+ 0·5	......	......	......	− 0 33·9	8·8	......	+86 35 42·2
	51 (Hev.) Cephei S.P.	21·4	28·7	+0·2	263 18 25·3	......	49·0	29·39	51·9	− 0 42·8	8·4	......	+87 15 33·6
	(n) Moon South L.	55·5	....	−0·5	4 51 57·9	−11·4	......	......	......	+ 2 1·3	......	......	− 8 51 38·9
	(o)	40·0	....	−0·5	4 51 42·4	+ 3·1	......	......	......	+ 2 1·3	......	......	− 8 51 37·9
	(p)	31·1	37·0	−0·5	4 51 33·5	+13·5	47·2	29·38	50·5	+ 2 1·3	......	......	− 8 51 39·4
	3 Piscium	36·0	41·5	−0·6	356 40 38·1	......	......	......	......	+ 1 26·8	......	......	− 0 39 56·0
	φ Aquarii	29·7	35·0	−0·5	2 54 31·9	......	......	......	......	+ 1 51·4	......	......	− 6 54 14·4
	Uranus	45·0	51·9	−0·5	1 20 47·9	......	47·0	29·38	49·0	+ 1 44·4	......	......	− 5 20 23·4
	Mercury Centre	59·3	66·4	−0·5	345 0 2·3	......	51·9	29·33	52·0	+ 0 56·5	......	......	+11 1 10·1
	α Ursæ Majoris	35·8	42·8	+0·5	293 25 39·8	......	......	......	......	− 0 6·6	8·0	......	+62 36 35·7
Sept. 11	Sun South L.	15·8	21·9	−0·5	351 50 18·3	......	52·0	29·33	52·5	+ 1 11·9	......	8·8	+ 4 10 38·6
	γ Ursæ Majoris	10·8	18·1	+0·5	301 27 14·9	......	......	......	......	+ 0 1·4	9·5	......	+54 34 52·5
	Venus Centre	5·8	12·0	−0·6	355 43 8·3	......	52·1	29·32	52·4	+ 1 22·8	......	......	+ 0 17 37·7
	12 Canum Venat.	54·5	61·8	+0·2	316 50 58·3	......	......	......	......	+ 0 17·1	8·7	......	+39 10 53·4
	α Ursæ Minoris S.P.	18·3	26·0	+0·2	264 30 22·3	......	52·8	29·33	53·0	− 0 40·5	8·6	......	+88 27 33·0
	φ Aquarii	30·0	35·2	−0·5	2 54 32·1	......	47·0	29·30	49·4	+ 1 51·1	......	......	− 6 54 14·4
	(q) Moon North L.	15·3	21·3	−0·6	357 56 17·7	− 7·2	......	......	......	+ 1 30·9	......	......	− 1 55 32·6
	(r)	45·9	51·7	−0·6	357 55 48·2	+19·2	......	......	......	+ 1 30·9	......	......	− 1 55 29·5
	(a) Mercury Centre	2·8	9·2	−0·5	345 36 5·5	− 0·5	53·5	29·43	52·8	+ 0 57·8	......	......	+10 25 6·0
	α Ursæ Majoris	36·5	43·8	+0·5	293 25 40·6	......	......	......	......	− 0 6·6	8·5	......	+62 36 34·8

(a) At Wire IV.
(b) At $20^h\ 4^m\ 55^s$.
(c) At $20^h\ 6^m\ 5^s$.
(d) At $20^h\ 6^m\ 48^s$.
(e) At Wire II.
(f) At Wire V.
(g) At $15^h\ 51^m\ 40^s$.
(h) At $20^h\ 23^m\ 30^s$.
(i) At $21^h\ 47^m\ 40^s$.
(k) At $21^h\ 48^m\ 33^s$.
(l) At $21^h\ 49^m\ 12^s$.
(m) At $18^h\ 21^m\ 48^s$.
(n) At $22^h\ 36^m\ 45^s$.
(o) At $22^h\ 37^m\ 43^s$.
(p) At $22^h\ 38^m\ 25^s$.
(q) At $23^h\ 26^m\ 0^s$.
(r) At $23^h\ 27^m\ 39^s$.

Date.	OBJECT OBSERVED.	Microscope. I.	Microscope. II.	Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point observed.	Equatorial Point adopted.	Apparent Declination observed.
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Sept. 12	(a) Sun North L.	20·0	26·2	−0·5	351 41 22·6	− 0·3	55·0	29·44	54·0	+1 11·3	……	8·6	+ 4 19 35·0
	α Ursæ Minoris S.P.	19·0	26·0	+0·2	264 30 22·7	……	55·4	29·46	55·0	−0 40·5	8·8	……	+88 27 33·6
	η Ursæ Majoris	14·5	22·1	+0·4	305 55 18·7	……	……	……	……	+0 5·8	8·7	……	+50 6 44·1
	α Bootis	27·0	34·0	−0·3	336 0 30·2	……	56·0	29·46	55·8	+0 41·0	8·2	……	+20 0 57·4
	Uranus	35·6	41·5	−0·5	1 22 38·1	……	45·0	29·50	47·3	+1 45·4	……	……	− 5 22 14·9
	20 Piscium	5·2	12·1	−0·6	359 39 8·1	……	……	……	……	+1 37·9	……	……	− 3 38 37·4
	ω Piscium	53·7	60·5	−0·5	350 1 56·6	……	……	……	……	+1 8·6	……	……	+ 5 59 3·4
	(b) Moon North L.	45·8	53·2	−0·5	351 18 49·0	+12·6	46·6	29·49	48·0	+1 11·8	……	……	+ 4 41 55·2
Sept. 13	(c) δ Piscium	45·8	51·2	−0·5	349 42 48·0	− 0·1	43·7	29·16	46·2	+1 7·4	……	9·6	+ 6 18 14·3
	α Ursæ Minoris	8·7	16·5	+0·2	267 35 12·8	……	……	……	……	+0 36·5	10·2	……	+88 27 33·3
	(d) Moon North L.	39·8	….	−0·5	344 49 42·5	−12·2	……	……	……	+0 56·8	……	……	+11 11 42·5
	(e) …………	26·5	….	−0·5	344 49 29·2	+ 1·0	……	……	……	+0 56·8	……	……	+11 11 42·6
	(f) …………	15·2	21·5	−0·5	344 49 17·9	+11·3	……	……	……	+0 56·8	……	……	+11 11 43·6
Sept. 14	Mercury Centre	2·5	8·0	−0·5	347 35 4·7	……	47·9	29·01	50·5	+1 1·7	……	……	+ 8 26 3·2
Sept. 15	Sun South L.	17·1	24·6	−0·6	353 22 20·2	……	48·1	29·02	50·3	+1 15·7	……	……	+ 2 38 33·7
	γ Ursæ Majoris	12·3	20·0	+0·5	301 27 16·6	……	……	……	……	+0 1·4	9·9	……	+54 34 51·6
	α Ursæ Minoris S.P.	20·2	27·5	+0·2	264 30 24·0	……	48·9	28·98	50·2	−0 40·4	9·1	……	+88 27 34·0
	ζ Ursæ Majoris	27·5	34·4	+0·5	300 16 31·4	……	……	……	……	+0 0·2	……	……	+55 45 38·0
	η Ursæ Majoris	15·3	23·6	+0·4	305 55 19·8	……	49·0	……	……	+0 5·8	9·1	……	+50 6 44·0
Sept. 17	(g) λ Ursæ Minoris	39·1	46·0	+0·2	267 12 42·8	0·0	50·0	29·45	50·7	−0 37·0	8·6	8·8	+88 50 3·0
	(h) α Cygni	52·5	60·0	+0·3	311 18 56·6	0·0	……	……	……	+0 11·4	9·6	……	+44 43 0·8
	ζ Cygni	50·5	58·0	0·0	326 26 54·2	……	……	……	……	+0 28·4	8·6	……	+29 34 46·2
	α Cephei	14·7	22·9	+0·5	294 7 19·3	……	49·6	29·48	50·7	−0 6·0	8·6	……	+61 54 55·5
	Uranus	14·5	21·5	−0·5	1 27 17·5	……	48·7	29·52	50·0	+1 45·0	……	……	− 5 26 53·7
Sept. 18	Sun North L.	1·9	8·4	−0·6	354 0 4·5	……	50·9	29·76	50·9	+1 19·0	……	9·1	+ 2 0 45·6
	Venus Centre	26·8	32·7	−0·6	359 18 29·2	……	……	……	……	+1 36·6	……	……	− 3 17 56·7
	ζ Cygni	49·9	57·2	0·0	326 26 53·5	……	46·5	29·81	50·5	+0 28·9	8·6	……	+29 34 46·7
	α Cephei	14·9	23·2	+0·5	294 7 19·5	……	……	……	……	−0 6·1	9·0	……	+61 54 55·7
	β Aquarii	18·0	24·5	−0·5	2 16 20·7	……	46·5	……	……	+1 50·1	9·7	……	− 6 16 1·7
	Mercury Centre	16·1	22·0	−0·5	350 31 18·5	……	48·5	29·78	50·0	+1 10·2	……	……	+ 5 29 40·4
Sept. 19	Sun North L.	20·0	24·3	−0·6	354 23 21·6	……	49·0	……	……	+1 20·5	……	8·7	+ 1 37 26·6
	(i) α Ursæ Minoris S.P.	26·9	33·4	+0·2	264 30 30·3	− 3·0	49·2	29·76	50·3	−0 41·4	9·9	……	+88 27 37·2
	ζ Ursæ Minoris	28·9	36·3	+0·5	300 16 33·1	……	……	……	……	+0 0·2	……	……	+55 45 35·4
	α Bootis	26·6	34·8	−0·3	336 0 30·4	……	49·8	29·75	50·8	+0 41·9	8·5	……	+20 0 56·4
	ε Bootis	31·8	39·4	−0·1	328 16 35·5	……	49·6	……	……	+0 31·0	7·6	……	+27 45 2·2
Sept. 20	δ Leonis	39·7	46·0	−0·2	334 37 42·7	……	51·9	29·35	51·8	+0 39·1	9·7	9·5	+21 23 47·7
Sept. 21	(k) Sun North L.	0·6	7·5	−0·6	355 10 3·4	+ 0·9	……	……	……	+1 21·4	……	……	+ 0 50 43·8
	(l) Sun South L.	56·5	63·0	−0·6	355 41 59·1	− 0·9	50·8	29·36	51·5	+1 23·0	……	……	+ 0 18 48·3
	12 Canum Venat.	57·9	65·1	+0·2	316 51 1·7	……	……	……	……	+0 17·1	9·7	……	+39 10 50·7
	Venus Centre	13·4	20·0	−0·5	0 50 16·2	……	52·0	29·34	52·0	+1 41·0	……	……	− 4 49 47·7
	α Ursæ Minoris S.P.	22·7	29·7	+0·2	264 30 26·4	……	……	……	……	−0 40·6	9·1	……	+88 27 36·3
	ζ Ursæ Majoris	29·5	35·9	+0·5	300 16 33·2	……	……	……	……	+0 0·2	……	……	+55 45 36·1
Sept. 23	Sun South L.	43·6	50·0	−0·6	356 28 46·2	……	51·4	29·08	50·8	+1 24·6	……	9·4	− 0 28 1·4
	(m) α Ursæ Minoris S.P.	23·9	31·0	+0·2	264 30 27·6	− 0·6	……	……	……	−0 40·3	9·3	……	+88 27 37·3
	Venus Centre	58·5	65·2	−0·5	1 51 1·3	……	50·7	29·10	50·9	+1 44·7	……	……	− 5 50 36·6
	ζ Ursæ Majoris	31·0	38·0	+0·5	300 16 35·0	……	……	……	……	+0 0·2	……	……	+55 45 34·2
	(l) η Ursæ Majoris	17·7	25·0	+0·4	305 55 21·7	+ 0·6	……	……	……	+0 5·8	9·4	……	+50 6 41·3

(a) At Wire IV.
(b) At $0^h\ 16^m\ 58^s$.
(c) At Wire IV. The observation appears erroneous by several minutes, and is therefore excluded from the Mean.
(d) At $1^h\ 7^m\ 0^s$.
(e) At $1^h\ 7^m\ 53^s$.
(f) At $1^h\ 8^m\ 33^s$.
(g) At $20^h\ 21^m\ 45^s$.
(h) 20^s after transit.
(i) At $13^h\ 10^m\ 48^s$.
(k) At Wire I.
(l) At Wire V.
(m) At $13^h\ 0^m\ 0^s$.

Date.	Object Observed.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		"	"	"	° ′ "	"	°	In.	°	′ "	"	"	° ′ "
Sept. 23	(a) α Serpentis	9·2	15·8	−0·5	349 5 12·0	−0·1	50·1	29·14	51·0	+1 5·0	9·6	9·4	+ 6 55 52·5
Sept. 24	Sun North L.	13·6	19·2	−0·6	356 20 15·8	……	51·2	29·32	50·7	+1 24·8	……	9·8	− 0 19 30·8
	α Ursæ Minoris S.P.	23·5	31·0	+0·2	264 30 27·4	……	53·0	29·34	51·0	−0 40·5	9·1	……	+88 27 37·1
	η Ursæ Majoris	19·0	26·5	+0·4	305 55 23·1	……	……	……	……	+0 5·8	9·9	……	+50 6 40·9
	ε Bootis	34·8	41·6	−0·1	328 16 38·1	……	53·0	29·36	51·8	+0 30·4	8·9	……	+27 45 1·3
	(b) β Ursæ Minoris	54·0	63·1	+0·4	281 13 59·0	+1·7	……	……	……	−0 19·4	10·5	……	+74 48 28·5
	(c) λ Ursæ Minoris	37·2	44·7	+0·2	267 12 41·2	+1·1	47·9	29·46	50·7	−0 37·1	9·6	……	+88 50 4·6
	γ Ursæ Majoris	16·0	23·5	+0·5	301 27 20·2	……	……	……	……	+0 1·4	10·6	……	+54 34 48·2
Sept. 25	Sun South L.	31·3	37·1	−0·6	357 15 33·6	……	50·9	29·68	51·2	+1 29·0	……	9·0	− 1 14 53·6
	(d) α Ursæ Minoris S.P.	25·8	32·7	+0·2	264 30 29·4	−0·8	……	……	……	−0 41·0	9·4	……	+88 27 38·6
	Venus Centre	13·5	21·0	−0·5	2 51 16·7	……	52·8	29·68	52·2	+1 51·0	……	……	− 6 50 58·7
	(e) ε Ursæ Minoris	4·0	13·4	+0·3	273 45 9·0	+0·1	……	……	……	−0 28·4	9·1	……	+82 17 28·3
	α Herculis	34·5	42·0	−0·4	341 26 37·9	……	53·2	29·69	54·0	+0 50·4	8·6	……	+14 34 40·7
Sept. 28	Sun North L.	49·9	57·0	−0·6	357 53 52·9	……	59·5	28·85	56·8	+1 27·1	……	8·7	− 1 53 11·3
	(f) ζ Cygni	49·5	57·5	0·0	326 26 53·5	+0·1	49·0	28·73	52·5	+0 27·7	9·0	……	+29 34 47·4
	(g) α Cephei	11·2	20·0	+0·5	294 7 16·1	0·0	……	……	……	−0 5·8	8·5	……	+61 54 58·4
	β Cephei	18·5	28·8	+0·4	286 10 24·0	……	……	……	……	−0 13·9	8·7	……	+69 51 58·6
Sept. 29	Venus Centre	58·0	65·2	−0·5	4 50 1·1	……	47·6	28·66	49·0	+1 58·0	……	8·2	− 8 49 50·9
	β Draconis	31·7	38·6	+0·4	303 36 35·5	……	……	……	……	+0 3·5	8·2	……	+52 25 29·2
	(h) α Ophiuchi	17·4	25·0	−0·4	343 20 20·8	0·0	50·9	28·86	51·0	+0 52·6	8·1	……	+12 40 54·8
Oct. 2	Sun South L.	0·1	8·1	−0·6	359 59 3·5	……	51·7	29·83	51·4	+1 39·4	……	8·8	− 3 58 34·1
	(i) α Ursæ Minoris S.P.	30·5	36·6	+0·2	264 30 33·7	−3·5	……	……	……	−0 41·2	……	……	+88 27 40·2
	(k) ……	27·5	34·8	+0·2	264 30 31·3	−0·2	……	……	……	−0 41·2	8·6	……	+88 27 41·1
	ζ Ursæ Majoris	32·0	38·4	+0·5	300 16 35·7	……	……	……	……	+0 0·2	……	……	+55 45 32·9
	(f) η Ursæ Majoris	18·9	26·8	+0·4	305 55 23·2	+0·6	53·0	29·85	52·4	+0 5·9	8·4	……	+50 6 39·1
	(l) α Bootis	28·5	35·2	−0·3	336 0 31·5	+0·2	……	……	……	+0 41·8	7·8	……	+20 0 55·3
	Uranus	26·5	33·5	−0·5	1 40 29·5	……	45·0	29·98	47·7	+1 48·4	……	……	− 5 40 9·1
	γ Cephei R.	46·5	49·2	+0·1	140 51 47·9	……	……	……	……	+0 22·3	8·4	……	+76 44 47·8
	γ Ursæ Majoris S.P.	28·9	34·9	+0·1	230 39 32·0	……	45·0	29·98	47·8	−2 35·5	10·0	……	+54 34 47·7
	⁎ R. A. 0h 1m 52s	33·0	40·0	+0·4	306 6 36·9	……	……	……	……	+0 6·2	……	……	+49 55 25·7
Oct. 3	η Draconis	29·0	36·9	+0·5	294 9 33·5	……	48·8	29·98	49·5	−0 6·1	9·8	……	+61 52 41·4
Oct. 5	(m) Sun North L.	34·0	40·0	−0·5	0 36 36·5	−0·4	47·9	29·90	49·0	+1 42·9	……	9·3	− 4 36 9·7
	α Ursæ Minoris S.P.	29·1	35·3	+0·2	264 30 32·4	……	……	……	……	−0 41·7	8·7	……	+88 27 41·4
	Mercury Centre	17·2	24·0	−0·5	2 52 20·1	……	……	……	……	+1 52·9	……	……	− 6 52 3·7
	ζ Ursæ Majoris	35·0	41·7	+0·5	300 16 38·8	……	……	……	……	+0 0·2	……	……	+55 45 30·3
	η Ursæ Majoris	22·0	29·5	+0·4	305 55 26·1	……	……	……	……	+0 6·0	9·9	……	+50 6 37·2
	Venus Centre	51·5	60·0	−0·5	7 41 55·2	……	48·1	29·88	49·3	+2 20·6	……	……	−11 42 6·5
	α Bootis	30·6	37·0	−0·3	336 0 33·5	……	……	……	……	+0 42·2	9·4	……	+20 0 53·6
Oct. 6	(n) ι Ursæ Majoris	18·7	25·5	+0·4	307 22 22·5	+0·3	40·0	29·74	42·4	+0 7·5	9·7	9·7	+48 39 39·4
Oct. 7	β Cephei	17·9	28·0	+0·4	286 10 23·3	……	45·6	29·84	46·9	−0 14·5	9·7	……	+69 52 0·9
	ζ Pegasi	49·4	56·1	−0·5	346 0 52·2	……	45·1	29·84	46·8	+1 0·4	10·3	……	+10 0 17·1
	β Pegasi	7·5	14·0	−0·1	328 48 10·7	……	……	……	……	+0 32·2	……	……	+27 13 26·8
	Uranus	26·9	33·4	−0·5	1 44 29·7	……	……	……	……	+1 48·2	……	……	− 5 44 8·2
	γ Cephei R.	48·3	51·4	+0·1	140 51 49·9	……	……	……	……	+0 22·2	8·4	……	+76 44 48·8
	(m) γ Ursæ Majoris S.P.	27·8	33·8	+0·1	230 39 30·9	−0·2	43·0	29·86	45·3	−2 35·5	10·4	……	+54 34 45·5
	⁎ R.A. 0h 1m 52s	32·2	38·6	+0·4	306 6 35·8	……	……	……	……	+0 6·2	……	……	+49 55 27·7

(a) 30s after transit.
(b) At 14h 53m 40s.
(c) At 20h 27m 0s.
(d) At 13h 7m 10s.
(e) At 17h 3m 30s.
(f) At Wire V.
(g) At 21h 15m 50s.
(h) At 17h 29m 15s.
(i) At 12h 55m 20s.
(k) At 13h 5m 10s.
(l) At 14h 10m 0s.
(m) At Wire IV.
(n) Between Wires IV. and V.; observed and read off by Professor Encke.

Date.	OBJECT OBSERVED.	Microscope. I.	Microscope. II.	Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point observed.	Equatorial Point adopted.	Apparent Declination observed.
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Oct. 8	(a) α Ursæ Minoris S.P.	32·4	38·7	+0·2	264 30 35·7	− 1·3	50·6	29·92	50·4	− 0 41·5	9·7	9·2	+88 27 43·7
	ζ Ursæ Majoris	36·0	42·5	+0·5	300 16 39·7	……	……	……	……	+ 0 0·2	……	……	+55 45 29·3
	η Ursæ Majoris	22·5	29·0	+0·4	305 55 26·1	……	……	……	……	+ 0 5·9	8·8	……	+50 6 37·2
	α Bootis	31·1	37·2	−0·3	336 0 33·8	……	……	……	……	+ 0 42·0	9·0	……	+20 0 53·4
	Venus Centre	21·8	27·4	−0·5	9 4 24·1	……	51·8	29·92	51·4	+ 2 29·5	……	……	−13 4 44·4
Oct. 9	Sun South L.	24·8	30·2	−0·5	2 40 27·0	……	……	……	……	+ 1 51·2	……	9·0	− 6 40 9·2
	α Ursæ Minoris S.P.	30·6	37·9	+0·2	264 30 34·4	……	52·5	29·96	52·4	− 0 41·4	9·4	……	+88 27 44·0
	Mercury Centre	0·3	7·1	−0·5	5 44 3·2	……	……	……	……	+ 2 7·3	……	……	− 9 44 1·5
	(b) η Ursæ Majoris	22·2	29·2	+0·4	305 55 26·1	+ 1·1	……	……	……	+ 0 5·9	9·6	……	+50 6 35·9
	Venus Centre	14·6	22·4	−0·5	9 31 18·0	……	53·8	29·95	53·3	+ 2 32·7	……	……	−13 31 41·7
	(c) ε Bootis	37·0	43·7	−0·1	328 16 40·2	0·0	……	……	……	+ 0 31·0	8·8	……	+27 44 57·8
	β Ursæ Minoris	0·9	9·0	+0·4	281 14 5·4	……	53·8	29·95	53·6	− 0 19·7	10·2	……	+74 48 23·3
	Uranus	58·3	66·2	−0·5	1 46 1·7	……	47·5	29·92	48·5	+ 1 48·0	……	……	− 5 45 40·7
	χ¹ Piscium	27·0	32·1	−0·6	355 37 28·9	……	……	……	……	+ 1 24·9	……	……	+ 0 23 15·2
	γ Cephei R.	48·4	51·2	+0·1	140 51 49·9	……	……	……	……	+ 0 22·2	7·7	……	+76 44 49·5
	(d) λ Piscium	17·7	23·9	−0·6	355 6 20·2	− 0·4	……	……	……	+ 1 23·4	……	……	+ 0 54 25·8
	γ Ursæ Majoris S.P.	23·6	30·2	+0·1	230 39 27·0	……	……	……	……	− 2 34·6	8·3	……	+54 34 43·4
	(e) Moon South L.	38·5	….	−0·6	354 51 41·4	−11·9	……	……	……	+ 1 22·7	……	……	+ 1 9 16·8
	(f) ……	22·9	….	−0·6	354 51 25·8	+ 2·9	……	……	……	+ 1 22·6	……	……	+ 1 9 17·7
	(g) ……	10·8	17·9	−0·6	354 51 13·7	+14·3	……	……	……	+ 1 22·6	……	……	+ 1 9 18·4
	∗ R.A. $0^h 1^m 52^s$	30·3	38·5	+0·4	306 6 34·8	……	……	……	……	+ 0 6·2	……	……	+49 55 28·0
	35 Piscium	38·2	44·7	−0·5	348 4 41·0	……	46·8	29·92	48·4	+ 1 4·9	……	……	+ 7 56 23·1
Oct. 11	α Ophiuchi	16·0	24·3	−0·4	343 20 19·7	……	48·9	30·20	50·8	+ 0 55·3	9·1	10·0	+12 40 55·0
	γ Draconis	15·0	22·8	+0·4	304 31 19·3	……	……	……	……	+ 0 4·6	11·3	……	+51 30 46·1
	γ Pegasi	7·5	14·1	−0·4	341 43 10·4	……	46·0	30·22	49·8	+ 0 52·6	9·2	……	+14 18 7·0
	ε Piscium	52·5	59·1	−0·5	348 58 55·3	……	……	……	……	+ 1 7·8	……	……	+ 7 2 6·9
	∗ R.A. $0^h 55^m 37^s$	25·0	31·5	+0·2	316 53 28·5	……	……	……	……	+ 0 17·9	……	……	+39 8 23·6
	α Ursæ Minoris	58·3	65·9	+0·2	267 35 2·3	……	……	……	……	− 0 37·7	9·1	……	+88 27 45·4
	ζ Ursæ Majoris S.P.	5·1	12·2	+0·1	231 50 8·7	……	……	……	……	− 2 27·4	……	……	+55 45 31·3
	η Piscium	36·4	43·5	−0·4	341 29 39·6	……	……	……	……	+ 0 52·3	……	……	+14 31 38·1
	(h) Moon North L.	30·0	….	−0·4	341 18 33·7	−10·9	……	……	……	+ 0 52·0	……	……	+14 42 55·2
	(i) ……	16·0	….	−0·4	341 18 19·7	+ 2·4	……	……	……	+ 0 52·0	……	……	+14 42 55·9
	(k) ……	6·0	14·2	−0·4	341 18 9·7	+12·2	……	……	……	+ 0 52·0	……	……	+14 42 56·1
	(l) η Ursæ Majoris S.P.	7·6	14·2	+0·1	226 12 11·0	− 1·0	45·0	30·22	46·9	− 3 22·5	11·9	……	+50 6 37·5
	α Ursæ Minoris S.P.	32·5	38·5	+0·2	264 30 35·7	……	53·2	30·28	52·6	− 0 41·8	9·2	……	+88 27 43·9
Oct. 12	Sun North L.	17·1	24·1	−0·5	3 16 20·1	……	……	……	……	+ 1 54·7	……	9·1	− 7 16 5·7
	ζ Ursæ Majoris	36·9	43·6	+0·5	300 16 40·7	……	……	……	……	+ 0 0·2	……	……	+55 45 28·2
	η Ursæ Majoris	23·6	30·5	+0·4	305 55 27·4	……	……	……	……	+ 0 6·0	8·8	……	+50 6 35·7
	η Bootis	27·0	34·3	−0·3	336 49 30·4	……	……	……	……	+ 0 43·5	9·0	……	+19 11 55·2
	Mercury Centre	20·2	26·4	−0·5	7 46 22·8	……	54·9	30·28	54·4	+ 2 21·0	……	……	−11 46 34·7
	Venus Centre	56·9	63·9	−0·4	10 50 0·0	……	55·8	30·27	55·2	+ 2 44·9	……	……	−14 50 35·8
	δ Ursæ Minoris	55·0	63·5	+0·2	269 26 59·4	……	52·2	30·24	53·7	− 0 34·6	7·8	……	+86 35 44·3
	α Piscis Australis	41·0	46·7	−0·2	26 17 43·7	……	47·9	30·25	49·4	+12 24·9	……	……	−30 27 59·5
	Uranus	9·2	16·1	−0·5	1 48 12·2	……	……	……	……	+ 1 50·0	……	……	− 5 47 53·1
	γ Cephei R.	48·0	51·3	+0·1	140 51 49·7	……	44·8	30·25	49·0	+ 0 22·5	6·8	……	+76 44 49·5
	∗ R. A. $0^h 55^m 37^s$	24·8	30·9	+0·2	316 53 28·1	……	……	……	……	+ 0 17·9	……	……	+39 8 23·1
	∗ R. A. $1^h 0^m 34^s$	40·1	46·0	+0·2	317 5 43·2	……	……	……	……	+ 0 18·2	……	……	+38 56 7·7
	α Ursæ Minoris	57·8	65·0	+0·2	267 35 1·6	……	……	……	……	− 0 37·8	8·7	……	+88 27 45·3
	∗ R. A. $1^h 7^m 53^s$	26·1	33·3	+0·2	318 24 29·9	……	44·6	30·24	47·0	+ 0 19·7	……	……	+37 37 19·5
	ζ Ursæ Majoris S.P.	1·3	9·0	+0·1	231 50 5·2	……	……	……	……	− 2 27·9	……	……	+55 45 28·2
	∗ R. A. $1^h 27^m 43^s$	8·0	14·4	0·0	323 59 11·2	……	……	……	……	+ 0 26·3	……	……	+32 2 31·6
	(m) ∗ R. A. $1^h 29^m 55^s$	32·9	39·2	0·0	324 43 36·1	+ 0·1	……	……	……	+ 0 27·3	……	……	+31 18 5·6
	∗ R. A. $1^h 32^m 53^s$	30·0	35·6	0·0	324 46 32·8	……	……	……	……	+ 0 27·3	……	……	+31 15 9·0

(a) At $13^h 7^m 50^s$.
(b) $1^m 12^s$ after transit.
(c) At Wire IV.
(d) At $23^h 34^m 50^s$.
(e) At $23^h 51^m 42^s$.
(f) At $23^h 52^m 38^s$.
(g) At $23^h 53^m 20^s$.
(h) At $1^h 37^m 50^s$.
(i) At $1^h 38^m 46^s$.
(k) At $1^h 39^m 25^s$.
(l) At $1^h 42^m 24^s$.
(m) At Wire V.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Oct. 12	η Ursæ Majoris S.P.	7·0	14·5	+0·1	226 12 10·8	......	44·0	30·23	46·4	−3 23·0	12·6	9·1	+50 6 38·7
	θ^1 Arietis	25·9	32·1	−0·3	336 51 28·7	......	......	......	......	+0 44·4	......	......	+19 9 56·0
	ψ Arietis	20·1	26·0	−0·4	339 1 22·6	......	......	......	......	+0 48·0	......	......	+16 59 58·5
	(a) Moon North L.	46·9	....	−0·3	335 43 49·6	− 8·9	......	......	......	+0 42·6	......	......	+20 17 45·8
	(b)	35·3	....	−0·3	335 43 38·0	+ 2·7	......	......	......	+0 42·6	......	......	+20 17 45·8
	(c)	27·1	33·1	−0·3	335 43 29·8	+11·7	43·8	30·22	46·0	+0 42·6	......	......	+20 17 45·0
	α Ursæ Minoris S.P.	33·0	39·8	+0·2	264 30 36·6	......	52·0	30·13	51·9	−0 41·7	9·8	......	+88 27 45·8
Oct. 13	Sun South L.	50·0	57·5	−0·5	4 10 53·2	......	......	......	......	+1 58·9	......	8·5	− 8 10 43·6
	ζ Ursæ Majoris	37·0	44·0	+0·5	300 16 41·0	......	......	......	......	+0 0·2	......	......	+55 45 27·3
	η Ursæ Majoris	23·6	30·5	+0·4	305 55 27·4	......	......	......	......	+0 5·9	8·3	......	+50 6 35·2
	η Bootis	26·6	33·9	−0·3	336 49 30·2	......	......	......	......	+0 43·3	8·5	......	+19 11 55·0
	Mercury Centre	47·0	54·0	−0·5	8 25 50·0	......	54·0	30·10	53·7	+2 25·1	......	......	−12 26 6·6
	Venus Centre	28·5	33·9	−0·4	11 15 30·8	......	55·6	30·10	55·4	+2 48·0	......	......	−15 16 10·3
	(d) α Ursæ Minoris S.P.	58·1	65·0	+0·2	264 31 1·7	−26·1	......	......	......	−0 41·3	8·8	......	+88 27 45·8
Oct. 14	Sun North L.	7·1	14·0	−0·5	4 1 10·0	......	51·0	29·99	51·0	+1 58·3	......	8·7	− 8 0 59·6
	η Ursæ Majoris	23·9	31·4	+0·4	305 55 28·0	......	......	......	......	+0 5·9	......	......	+50 6 34·8
	Venus Centre	35·7	41·5	−0·4	11 40 38·2	......	52·0	30·00	52·0	+2 52·8	......	......	−15 41 22·3
	α Coronæ Borealis	15·1	22·2	−0·1	328 46 18·5	......	52·0	29·98	52·0	+0 31·7	8·5	......	+27 15 18·5
	(e) δ Ursæ Minoris	54·0	63·0	+0·2	269 26 58·7	+ 1·5	50·5	29·96	51·2	−0 34·4	8·6	......	+86 35 42·9
	α Lyræ	16·3	23·0	+0·2	317 23 19·9	......	......	......	......	+0 18·1	9·0	......	+38 38 30·7
	Uranus	33·5	40·1	−0·5	1 49 36·3	......	45·0	29·96	46·8	+1 49·0	......	......	− 5 49 16·6
Oct. 15	α Ursæ Minoris S.P.	32·2	37·8	+0·2	264 30 35·2	......	55·8	29·44	55·0	−0 40·4	8·5	9·1	+88 27 45·7
Oct. 16	Sun South L.	37·5	42·6	−0·5	5 17 39·6	......	......	......	......	+2 1·8	......	......	− 9 17 32·3
Oct. 17	Sun North L.	26·8	32·8	−0·5	5 7 29·3	......	48·2	29·59	49·5	+2 3·3	......	......	− 9 7 23·5
	(f) η Ursæ Majoris	24·7	32·0	+0·4	305 55 28·7	0·0	......	......	......	+0 5·9	8·1	......	−50 6 34·5
	η Bootis	29·1	35·9	−0·3	336 49 32·2	......	......	. ....	......	+0 43·1	9·5	......	+19 11 53·8
Oct. 18	(g) Moon South L.	59·0	....	−0·4	338 49 1·8	+13·1	......	......	......	+0 45·7	......	......	+17 12 8·5
	(h)	10·5	....	−0·4	338 49 13·3	0·0	......	......	......	+0 45·7	......	......	+17 12 10·1
	(i)	18·8	25·1	−0·4	338 49 21·6	− 8·6	45·5	29·06	47·7	+0 45·7	......	......	+17 12 10·4
	α Hydræ	17·5	23·8	−0·5	3 58 20·2	......	......	......	......	+1 55·7	8·8	......	− 7 58 6·8
	θ Ursæ Majoris	15·0	22·0	+0·4	303 38 18·9	......	......	......	......	+0 3·5	10·8	......	+52 23 46·7
	(k) ε Leonis	15·1	21·6	−0·2	331 31 18·1	0·0	45·7	29·08	47·9	+0 34·8	8·5	......	+24 30 16·2
	α Ursæ Minoris S.P.	34·4	40·2	+0·2	264 30 37·5	......	50·1	29·20	50·0	−0 40·5	9·5	......	+88 27 47·9
Oct. 19	Sun South L.	8·8	16·0	−0·5	6 23 11·9	......	50·4	29·24	50·0	+2 8·5	......	9·2	−10 23 11·2
	(l) Mercury Centre	5·0	10·0	−0·4	12 7 7·1	− 0·6	50·8	29·28	50·1	+2 53·3	......	......	−16 7 50·6
	Venus Centre	13·2	20·0	−0·4	13 40 16·2	......	51·0	29·29	50·2	+3 10·2	......	......	−17 41 17·2
	δ Ursæ Minoris	56·1	64·8	+0·2	269 27 0·6	......	50·0	29·47	50·4	−0 33·9	9·2	......	+86 35 42·5
	Uranus	55·5	62·1	−0·5	1 52 58·3	......	46·5	29·64	47·9	+1 47·8	......	......	− 5 52 36·9
	α Ursæ Minoris	54·5	62·0	+0·2	267 34 58·5	......	44·7	29·69	46·9	−0 37·1	9·1	......	+88 27 47·8
	(m) α Ursæ Minoris S.P.	38·2	44·7	+0·2	264 30 41·6	− 3·1	47·0	29·79	47·7	−0 41·6	......	......	+88 27 47·7
	(n)	35·9	42·0	+0·2	264 30 39·1	......	......	......	......	−0 41·6	9·4	......	+88 27 48·3
	(k) ζ Ursæ Majoris	39·7	46·2	+0·5	300 16 43·4	+ 0·8	......	......	......	+0 0·2	......	......	+55 45 24·8
Oct. 20	Sun North L.	33·0	39·0	−0·5	6 12 35·5	......	47·8	29·79	48·0	+2 10·7	......	9·2	−10 12 37·0
	α Bootis	33·7	39·8	−0·3	336 0 36·4	......	......	......	......	...0 42·1	9·2	......	+20 0 50·7
	β Ursæ Minoris	4·5	12·3	+0·4	281 14 8·8	......	......	......	......	−0 19·8	9·7	......	+74 48 20·2
	Venus Centre	49·7	56·2	−0·4	14 2 52·6	......	48·9	29·80	49·3	+3 19·1	......	......	−18 4 2·5
	(o) δ Ursæ Miuoris	56·1	64·2	+0·2	269 27 0·3	+ 0·5	49·2	29·82	49·8	−0 34·4	8·8	......	+86 35 42·8

(a) At $2^h\ 36^m\ 36^s$.
(b) At $2^h\ 37^m\ 36^s$.
(c) At $2^h\ 38^m\ 18^s$.
(d) At $13^h\ 25^m\ 20^s$.

(e) At $18^h\ 27^m\ 22^s$.
(f) 15^s after transit.
(g) At $9^h\ 1^m\ 40^s$.
(h) At $9^h\ 2^m\ 36^s$.

(i) At $9^h\ 3^m\ 16^s$.
(k) At Wire V.
(l) At Wire IV.

(m) At $12^h\ 55^m\ 45^s$.
(n) On Meridian.
(o) At $18^h\ 25^m\ 50^s$.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		"	"	"	° ′ "	"	°	In.	°	′ "	"	"	° ′ "
Oct. 21	α Ursæ Minoris S.P.	34·1	41·0	+0·2	264 30 37·7	......	48·2	29·62	48·7	− 0 41·3	7·8	9·2	+88 27 47·2
	ζ Ursæ Majoris	39·6	47·0	+0·5	300 16 43·8	......	......	......	......	+ 0 0·2	......	......	+55 45 25·2
	η Ursæ Majoris	27·1	34·1	+0·4	305 55 31·0	......	......	......	......	+ 0 5·9	9·0	......	+50 6 32·3
	η Bootis	30·9	38·6	−0·3	336 49 34·5	......	......	......	......	+ 0 43·1	10·8	......	+19 11 51·6
Oct. 22	Sun South L.	23·0	29·3	−0·5	7 27 25·6	......	49·1	29·63	49·4	+ 2 17·4	......	9·6	−11 27 33·4
	(a) Venus Centre	39·3	43·6	−0·4	14 46 41·0	−0·5	50·3	29·62	50·0	+ 3 27·0	......	......	−18 44 57·9
	(b) δ Ursæ Minoris	54·1	62·6	+0·2	269 26 58·5	+2·8	49·9	29·60	50·3	− 0 34·1	9·4	......	+86 35 42·4
	α Piscis Australis	44·1	48·5	−0·2	26 17 46·1	......	43·2	29·63	45·4	+12 17·6	......	......	−30 27 54·1
	Uranus	42·7	49·0	−0·5	1 54 45·4	......	......	......	......	+ 1 48·6	......	......	− 5 54 24·4
	∗ R.A. $0^{h}\ 55^{m}\ 37^{s}$	23·0	29·8	+0·2	316 53 26·6	......	42·9	29·61	44·7	+ 0 17·6	......	......	+39 8 25·4
	∗ R.A. $1^{h}\ 0^{m}\ 34^{s}$	38·8	44·9	+0·2	317 5 42·0	......	......	......	......	+ 0 17·9	......	......	+38 56 9·7
	α Ursæ Minoris	53·6	60·7	+0·2	267 34 57·4	......	......	......	......	− 0 37·2	8·9	......	+88 27 49·4
	∗ R.A. $1^{h}\ 7^{m}\ 53^{s}$	24·5	30·5	+0·2	318 24 27·7	......	......	......	......	+ 0 19·3	......	......	+37 37 22·6
Oct. 23	ζ Pegasi	49·8	56·2	−0·5	346 0 52·5	......	44·0	29·21	45·6	+ 0 59·3	10·2	......	+10 0 17·8
	β Pegasi	6·6	13·0	−0·1	328 48 9·7	......	......	......	......	+ 0 31·5	......	......	+27 13 28·4
	ι Piscium	54·6	61·3	−0·5	351 14 57·5	......	42·9	29·21	44·7	+ 1 11·4	10·1	......	+ 4 46 0·7
Oct. 24	(a) Sun North L.	12·9	19·1	−0·5	7 37 15·5	−0·5	44·7	29·27	45·7	+ 2 18·1	......	9·5	−11 37 23·6
	α Bootis	35·8	41·4	−0·3	336 0 38·3	......	......	......	......	+ 0 41·7	9·7	......	+20 0 49·5
	β Ursæ Minoris	5·5	13·1	+0·4	281 14 9·7	......	......	......	......	− 0 19·6	9·4	......	+74 48 19·4
	Venus Centre	28·0	32·8	−0·4	15 28 30·0	......	45·8	29·28	46·4	+ 3 36·6	......	......	−19 29 57·1
	(c) δ Ursæ Minoris	56·9	65·0	+0·2	269 27 1·1	+0·5	43·4	29·31	45·2	− 0 34·2	9·4	......	+86 35 42·1
	ζ Pegasi	50·6	57·0	−0·5	346 0 53·3	......	41·2	29·40	43·5	+ 1 0·0	11·7	......	+10 0 16·2
	α Piscis Australis	49·5	54·3	−0·2	26 17 51·7	......	......	......	......	+12 15·5	......	......	−30 27 47·7
	Uranus	51·9	59·0	−0·5	1 55 54·9	......	41·0	29·41	42·9	+ 1 48·4	......	......	− 5 55 33·8
	12 Canum Venat. S.P.	12·0	18·6	0·0	215 22 15·3	......	40·2	29·40	42·2	− 9 26·6	7·4	......	+39 10 39·2
	(d) α Ursæ Minoris	51·0	58·5	+0·2	267 34 55·0	+2·2	......	......	......	− 0 37·1	9·6	......	+88 27 49·4
	(e) ∗ R.A. $1^{h}\ 0^{m}\ 34^{s}$	40·4	46·3	+0·2	317 5 43·5	0·0	......	......	......	+ 0 17·8	......	......	+38 56 8·2
	∗ R.A. $1^{h}\ 6^{m}\ 22^{s}$	58·6	66·0	+0·2	318 23 2·5	......	......	......	......	+ 0 19·3	......	......	+37 38 47·7
	(e) ∗ R.A. $1^{h}\ 8^{m}\ 31^{s}$	46·9	54·0	+0·2	318 37 50·7	0·0	......	......	......	+ 0 19·6	......	......	+37 23 59·2
	(f) ∗ R.A. $1^{h}\ 16^{m}\ 4^{s}$	24·0	30·0	+0·1	321 7 27·1	+0·8	......	......	......	+ 0 22·4	......	......	+34 54 19·2
	(g) ∗ R.A. $1^{h}\ 16^{m}\ 19^{s}$	29·5	35·5	+0·1	320 53 32·6	+0·7	40·1	29·42	41·9	+ 0 22·2	......	......	+35 8 14·0
Oct. 26	α Piscis Australis	49·0	53·8	−0·2	26 17 51·2	......	45·0	29·09	45·5	+12 1·0	......	9·8	−30 27 42·4
	β Pegasi	7·5	14·0	−0·1	328 48 10·7	......	......	......	......	+ 0 31·3	......	......	+27 13 27·8
Oct. 27	γ Draconis	16·1	23·7	+0·4	304 31 20·3	......	45·1	28·67	46·0	+ 0 4·4	9·9	......	+51 30 45·1
	δ Ursæ Minoris	56·1	64·6	+0·2	269 27 0·5	......	......	......	......	− 0 33·4	8·7	......	+86 35 42·7
	α Lyræ	18·5	24·9	+0·2	317 23 21·9	......	44·0	......	......	+ 0 17·6	9·4	......	+38 38 30·3
	ζ Pegasi	51·7	57·7	−0·5	346 0 54·2	......	40·0	28·62	42·0	+ 0 58·6	11·3	......	+10 0 17·0
	α Piscis Australis	2·6	7·0	−0·2	26 18 4·6	......	40·0	......	......	+11 58·1	......	......	−30 27 52·9
	Uranus	29·5	34·9	−0·5	1 57 31·7	......	40·0	28·61	41·8	+ 1 45·8	......	......	− 5 57 7·7
Oct. 28	β Draconis	37·4	44·4	+0·4	303 36 41·3	......	42·9	28·83	44·0	+ 0 3·5	9·8	9·6	+52 25 24·8
	γ Draconis	16·5	23·5	+0·4	304 31 20·4	......	......	......	......	+ 0 4·4	9·8	......	+51 30 44·8
	α Lyræ	18·0	25·0	+0·2	317 23 21·7	......	42·8	28·87	44·4	+. 0 17·7	9·2	......	+38 38 30·2
Oct. 30	(h) Sun South L.	48·0	53·1	−0·4	10 10 50·1	−0·2	48·3	29·12	47·5	+ 2 35·4	......	8·6	−14 11 16·7
	α Coronæ Borealis	19·9	26·7	−0·1	328 46 23·2	......	48·5	29·14	47·7	+ 0 31·1	9·0	......	+27 15 14·3
	Venus Centre	4·1	10·0	−0·3	17 21 6·7	......	49·0	29·14	48·0	+ 4 5·6	......	......	−21 23 3·7
	(i) δ Ursæ Minoris	56·5	65·0	+0·2	269 27 0·9	0·0	47·4	29·17	47·9	− 0 33·7	8·4	......	+86 35 41·4
	α Lyræ	17·8	25·0	+0·2	317 23 21·6	......	......	......	......	+ 0 17·8	8·9	......	+38 38 29·2
	β Lyræ	39·0	45·5	+0·1	322 50 42·4	......	46·5	......	......	+ 0 24·0	7·9	......	+33 11 2·2
	Uranus	52·3	59·0	−0·5	1 58 55·2	......	43·0	29·22	46·0	+ 1 47·4	......	......	− 5 58 34·0

(a) At Wire IV.
(b) At $18^{h}\ 28^{m}\ 45^{s}$.
(c) At $18^{h}\ 26^{m}\ 0^{s}$.
(d) At $0^{h}\ 57^{m}\ 0^{s}$.
(e) 12^{s} after transit.
(f) At Wire I.
(g) $1^{m}\ 6^{s}$ after transit.
(h) 10^{s} after transit.
(i) At $18^{h}\ 24^{m}\ 23^{s}$.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		"	"	"	° ′ "	"	°	In.	°	′ "	"	"	° ′ "
Oct. 31	Sun North L.	2·0	8·0	−0·5	9 58 4·5	……	49·0	29·33	46·9	+2 34·5	……	8·6	−13 58 30·4
Nov. 2	α Cassiopeæ	59·5	67·5	+0·5	300 22 4·0	……	48·0	29·17	48·4	+0 0·3	10·4	9·1	+55 40 4·8
	(a) α Ursæ Minoris	45·2	52·0	+0·2	267 34 48·8	+ 2·4	……	……	……	−0 36·2	7·9	……	+88 27 54·1
	(b) ⁎ R.A. $0^h 59^m 1^s$	27·9	33·0	+0·2	317 37 30·6	+ 0·9	……	……	……	+0 18·0	……	……	+38 24 19·6
	(c) ⁎ R.A. $1^h 4^m 8^s$	0·5	7·9	+0·2	317 48 4·4	+ 0·1	……	……	……	+0 18·2	……	……	+38 13 46·4
	⁎ R.A. $1^h 8^m 31^s$	45·0	51·5	+0·2	318 37 48·5	……	……	……	……	+0 19·1	……	……	+37 24 1·5
	θ^1 Ceti	19·4	25·0	−0·5	5 0 21·7	……	……	……	……	+2 0·9	8·8	……	− 9 0 13·5
	(d) ⁎ R.A. $1^h 27^m 43^s$	6·3	11·9	0·0	323 59 9·1	− 0·1	……	……	……	+0 25·2	……	……	+32 2 34·9
	(e) ⁎ R.A. $1^h 29^m 55^s$	29·4	35·1	0·0	324 43 32·3	+ 0·8	……	……	……	+0 26·1	……	……	+31 18 9·9
	⁎ R.A. $1^h 32^m 53^s$	28·5	34·3	0·0	324 46 31·4	……	……	……	……	+0 26·2	……	……	+31 15 11·5
	η Ursæ Majoris S.P.	49·8	56·6	+0·1	226 11 53·3	……	45·9	29·20	48·0	−3 15·5	9·7	……	+50 6 28·7
	α Arietis	50·5	56·1	−0·2	333 18 53·1	……	45·8	……	……	+0 37·5	8·5	……	+22 42 38·5
Nov. 3	δ Ursæ Minoris	57·5	65·9	+0·2	269 27 1·9	……	49·2	29·15	49·0	−0 33·6	8·9	9·5	+86 35 41·2
	α Lyræ	19·3	26·5	+0·2	317 23 23·1	……	……	……	……	+0 17·7	9·7	……	+38 38 28·7
Nov. 4	ζ Pegasi	50·5	57·0	−0·5	346 0 53·2	……	46·0	28·75	47·5	+0 58·1	9·8	……	+10 0 18·2
	(f) Moon South L.	20·3	…·	−0·5	4 14 23·1	−11·8	……	……	……	+1 55·7	……	……	− 8 13 57·5
	(g) ……	6·5	…·	−0·5	4 14 9·3	+ 1·5	……	……	……	+1 55·7	……	……	− 8 13 57·0
	(h) ……	55·9	62·5	−0·5	4 13 58·7	+13·4	……	……	……	+1 55·7	……	……	− 8 13 58·3
	(i) β Pegasi	5·0	12·0	−0·1	328 48 8·4	+ 0·6	……	……	……	+0 30·8	……	……	+27 13 29·7
	α Pegasi	3·8	11·1	−0·4	341 40 7·0	……	46·0	……	……	+0 49·9	9·7	……	+14 21 12·6
	γ Piscium	52·8	58·2	−0·6	353 35 54·9	……	……	……	……	+1 16·0	……	……	+ 2 24 58·6
Nov. 5	3 Piscium	38·9	43·1	−0·6	356 40 40·4	……	……	……	……	+1 25·6	……	9·4	− 0 39 56·6
	α Pegasi	3·0	11·0	−0·4	341 40 6·6	……	44·3	28·80	46·5	+0 50·2	9·6	……	+14 21 12·6
	γ Piscium	51·1	58·1	−0·6	353 35 54·0	……	……	……	……	+1 16·4	……	……	+ 2 24 59·0
	Uranus	17·7	24·1	−0·5	2 1 20·4	……	……	……	……	+1 45·7	……	……	− 6 0 56·7
	(k) Moon South L.	3·7	…·	−0·6	357 59 6·0	+ 0·8	……	……	……	+1 30·1	……	……	− 1 58 27·5
	(l) ……	52·1	57·8	−0·6	357 58 54·4	+11·6	……	……	……	+1 30·1	……	……	− 1 58 26·7
	γ Cephei	27·2	34·4	+0·4	279 17 31·2	……	……	……	……	−0 21·5	8·9	……	+76 44 59·7
	20 Piscium	9·3	15·2	−0·6	359 39 11·7	……	……	……	……	+1 36·2	……	……	− 3 38 38·5
	ω Piscium	53·2	59·5	−0·5	350 1 55·8	……	……	……	……	+1 7·4	……	……	+ 5 59 6·2
	α Andromedæ	40·0	45·8	−0·1	327 48 42·8	……	44·0	28·83	46·6	+0 29·8	9·8	……	+28 12 56·8
Nov. 7	Venus Centre	37·5	40·8	−0·3	19 17 38·9	……	47·8	28·57	47·9	+4 44·0	……	10·2	−23 20 12·7
	(m) ζ Aquilæ	18·5	24·9	−0·4	342 23 21·3	− 0·1	45·8	28·61	47·0	+0 51·0	9·9	……	+13 37 58·0
	γ Aquilæ	18·3	23·5	−0·5	345 47 20·4	……	……	……	……	+0 57·4	10·9	……	+10 13 52·4
	α Aquilæ	53·1	58·8	−0·5	347 33 55·5	……	……	……	……	+1 1·1	10·1	……	+ 8 27 13·6
	(n) λ Ursæ Minoris	43·7	50·2	+0·2	267 11 47·1	+48·4	45·3	28·64	46·8	−0 36·3	8·9	……	+88 50 11·0
	(o) δ Piscium	45·0	51·5	−0·5	349 17 47·8	− 0·3	42·0	28·72	45·1	+1 5·7	……	……	+ 6 43 17·0
	(o) 12 Canum Venat. S.P.	44·8	50·0	0·0	215 21 47·4	− 0·9	……	……	……	−9 11·0	……	……	+39 10 25·3
	ε Piscium	56·0	62·5	−0·5	348 58 58·8	……	……	……	……	+1 5·0	……	……	+ 7 2 6·4
	⁎ R.A. $0^h 59^m 1^s$	28·9	34·2	+0·2	317 37 31·7	……	……	……	……	+0 17·9	……	……	+38 24 20·6
	⁎ R.A. $1^h 4^m 8^s$	0·7	7·8	+0·2	317 48 4·5	……	……	……	……	+0 18·1	……	……	+38 13 47·6
	⁎ R.A. $1^h 6^m 22^s$	56·5	63·2	+0·2	318 23 0·1	……	……	……	……	+0 18·8	……	……	+37 38 51·3
	(p) Moon South L.	1·4	…·	−0·5	344 58 3·7	−13·2	……	……	……	+0 56·5	……	……	+11 3 23·2
	(q) ……	46·8	…·	−0·5	344 57 49·1	0·0	……	……	……	+0 56·5	……	……	+11 3 24·6
	(r) ……	36·5	42·0	−0·5	344 57 38·8	+10·2	……	……	……	+0 56·5	……	……	+11 3 24·7
	(i) ⁎ R.A. $1^h 16^m 4^s$	21·9	28·1	+0·1	321 7 25·1	+ 0·8	……	……	……	+0 21·8	……	……	+34 54 22·5
	(s) ⁎ R.A. $1^h 16^m 19^s$	30·0	35·1	+0·1	320 53 32·7	+ 0·5	……	……	……	+0 21·6	……	……	+35 8 15·4
	η Piscium	40·0	46·1	−0·4	341 29 42·7	……	……	……	……	+0 50·1	……	……	+14 31 37·4
	⁎ R.A. $1^h 27^m 43^s$	6·1	12·5	0·0	323 59 9·3	……	……	……	……	+0 25·2	……	……	+32 2 35·7
	(c) ⁎ R.A. $1^h 29^m 55^s$	32·8	37·8	0·0	324 43 35·3	0·0	……	……	……	+0 26·1	……	……	+31 18 8·8
	⁎ R.A. $1^h 32^m 53^s$	28·0	33·5	0·0	324 46 30·7	……	……	……	……	+0 26·2	……	……	+31 15 13·3

(a) At $0^h 57^m 5^s$.
(b) $1^m 10^s$ after transit.
(c) At Wire IV.
(d) 10^s after transit.
(e) At $1^h 31^m 55^s$.

(f) At $22^h 39^m 17^s$.
(g) At $22^h 40^m 12^s$.
(h) At $22^h 40^m 50^s$.
(i) At Wire I.
(k) At $23^h 28^m 24^s$.

(l) At $23^h 29^m 6^s$.
(m) 30^s after transit.
(n) At $19^h 46^m 30^s$.
(o) At Wire V.

(p) At $1^h 10^m 15^s$.
(q) At $1^h 11^m 8^s$.
(r) At $1^h 11^m 48^s$.
(s) 54^s after transit.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Nov. 7	η Ursæ Majoris S.P.	49·0	54·5	+0·1	226 11 51·8	......	......	......	......	−3 14·1	11·4	10·2	+50 6 27·5
	β Arietis	32·0	37·2	−0·3	335 59 34·3	......	41·4	28·75	45·0	+0 41·2	......	......	+20 1 54·7
Nov. 10	η Tauri	49·9	56·1	−0·2	332 24 52·8	......	39·3	28·82	41·3	+0 36·2	9·5	9·1	+23 36 40·1
	(a) ζ Ursæ Minoris S.P.	51·9	59·0	+0·1	254 19 55·6	− 1·3	......	......	......	−0 58·7	9·2	......	+78 16 46·5
	γ¹ Eridani	14·1	19·8	−0·5	9 57 16·4	......	......	......	......	+2 34·8	9·4	......	−13 57 42·1
	37 Tauri	46·9	52·3	−0·2	334 22 49·4	......	......	......	......	+0 39·0	......	......	+21 38 40·7
	(b) Moon North L.	40·7	....	−0·1	329 57 43·3	− 3·5	......	......	......	+0 32·9	......	......	+26 3 56·4
	(c)	35·0	....	−0·1	329 57 37·6	+ 1·6	......	......	......	+0 32·9	......	......	+26 3 57·0
	(d)	31·6	37·0	−0·1	329 57 34·2	+ 6·0	......	......	......	+0 32·9	......	......	+26 3 56·0
	(e) η Draconis S.P.	25·3	31·7	+0·1	237 56 28·6	− 0·5	......	......	......	−1 48·0	7·8	......	+61 52 31·0
	α Tauri	7·0	13·7	−0·4	339 50 9·9	......	39·1	28·82	41·0	+0 47·6	9·2	......	+16 11 11·6
	β Ursæ Minoris	12·6	19·5	+0·4	281 14 16·5	......	42·8	28·88	43·8	−0 19·5	9·5	......	+74 48 12·1
Nov. 11	ε Ursæ Minoris	14·1	22·0	+0·3	273 45 18·3	......	......	......	......	−0 28·1	8·7	8·7	+82 17 18·5
	Venus Centre	56·7	62·6	−0·3	19 59 59·4	......	43·8	28·88	45·0	+5 8·9	......	......	−24 2 59·6
	α Ophiuchi	21·0	29·1	−0·4	343 20 24·6	......	......	......	......	+0 53·4	8·7	......	+12 40 50·7
	δ Ursæ Minoris	59·1	66·8	+0·2	269 27 3·1	......	43·0	28·88	44·5	−0 33·7	8·5	......	+86 35 39·3
	(f) α Ursæ Minoris	43·2	50·1	+0·2	267 34 46·9	+ 2·5	......	......	......	−0 36·6	8·8	......	+88 27 55·9
	(g) ∗ R.A. $0^h 59^m 1^s$	28·5	33·0	+0·2	317 37 30·9	+ 0·1	40·0	28·95	41·5	+0 18·2	......	......	+38 24 19·5
Nov. 12	Venus Centre	45·2	50·5	−0·3	20 8 47·6	......	43·8	29·09	44·3	+5 15·6	......	9·3	−24 11 53·9
	(h) α Ophiuchi	21·6	29·0	−0·4	343 20 24·9	0·0	......	......	......	+0 53·8	9·2	......	+12 40 50·6
	γ Draconis	20·0	26·1	+0·4	304 31 23·4	......	......	......	......	+0 4·4	9·5	......	+51 30 41·5
	δ Ursæ Minoris	0·0	8·3	+0·2	269 27 4·3	......	......	......	......	−0 33·9	9·3	......	+86 35 38·9
	α Lyræ	20·1	27·5	+0·2	317 23 24·0	......	44·0	29·10	45·4	+0 17·8	9·2	......	+38 38 27·5
Nov. 14	(g) γ Cephei	24·7	31·8	+0·4	279 17 28·6	+ 0·7	39·7	28·81	42·3	−0 21·7	8·9	9·3	+76 45 1·7
	(h) α Andromedæ	38·3	43·5	−0·1	327 48 40·8	+ 0·5	......	......	......	+0 30·1	9·3	......	+28 12 57·9
	(h) γ Pegasi	9·2	14·8	−0·4	341 43 11·6	+ 0·1	......	......	......	+0 50·8	10·3	......	+14 18 6·8
	(i) α Ursæ Minoris	43·0	48·9	+0·2	267 34 46·2	+ 1·9	39·2	28·84	41·7	−0 36·5	8·7	......	+88 27 57·7
	(k) ∗ R.A. $1^h 4^m 8^s$	59·4	65·9	+0·2	317 48 2·9	+ 0·4	......	......	......	+0 18·3	......	......	+38 13 47·7
	(l) ∗ R.A. $1^h 6^m 22^s$	56·2	62·9	+0·2	318 22 59·8	+ 0·1	......	......	......	+0 18·9	......	......	+37 38 50·5
	(m) ∗ R.A. $1^h 7^m 53^s$	21·5	27·0	+0·2	318 24 24·5	+ 0·3	......	......	......	+0 19·0	......	......	+37 37 25·5
	(n) ∗ R.A. $1^h 16^m 4^s$	21·0	26·5	+0·1	321 7 23·8	+ 0·8	......	......	......	+0 22·0	......	......	+34 54 22·7
	(g) ∗ R.A. $1^h 16^m 19^s$	28·5	33·9	+0·1	320 53 31·3	0·0	......	......	......	+0 21·8	......	......	+35 8 16·2
Nov. 16	(o) λ Ursæ Minoris	32·1	37·7	+0·2	267 12 35·1	+ 0·6	47·0	28·32	44·0	−0 35·8	9·4	9·5	+88 50 9·6
	(p) Moon South L.	28·0	33·4	−0·5	348 58 30·2	− 2·7	42·0	29·04	43·6	+1 5·7	......	......	+ 7 2 36·3
	α Ursæ Majoris	57·9	65·9	+0·5	293 26 2·4	......	......	......	......	−0 6·7	9·8	......	+62 36 13·8
	(h) δ Hydræ and Crateris	31·5	36·8	−0·5	9 54 33·7	− 0·8	......	......	......	+2 35·2	9·5	......	−13 54 58·6
	(h) Mars Centre	0·2	7·0	−0·5	351 20 3·1	− 0·6	......	......	......	+1 11·5	......	......	+ 4 40 55·5
	γ Ursæ Majoris	33·0	38·5	+0·5	301 27 36·3	......	41·4	29·10	42·9	+0 1·4	9·4	......	+54 34 31·8
Nov. 17	(q) α Ursæ Minoris	46·0	51·0	+0·2	267 34 48·7	+ 1·0	32·7	29·16	35·4	−0 37·4	10·3	10·2	+88 27 57·9
	(r) Moon South L.	17·6	23·0	−0·6	355 13 19·7	+13·4	......	......	......	+1 25·0	......	......	+ 0 47 12·1
	(s)	32·4	35·4	−0·6	355 13 33·3	− 3·2	33·0	29·47	36·9	+1 25·0	......	......	+ 0 47 15·1
	(h) Mars Centre	58·9	63·2	−0·5	351 33 0·6	− 0·6	......	......	......	+1 14·4	......	......	+ 4 27 55·8
	γ Ursæ Majoris	34·5	38·9	+0·5	301 27 37·2	......	......	......	......	+0 1·4	10·0	......	+54 34 31·6
	β Ursæ Minoris	16·5	23·8	+0·4	281 14 20·6	......	37·0	29·50	38·0	−0 20·1	10·3	......	+74 48 9·7
Nov. 18	Sun South L.	57·8	63·2	−0·4	15 35 0·1	......	37·5	29·51	38·7	+3 43·9	......	9·6	−19 36 34·4
	δ Ursæ Minoris	2·9	10·0	+0·2	269 27 6·6	......	36·5	29·52	38·7	−0 34·9	9·3	......	+86 35 37·9
	α Lyræ	21·6	26·3	+0·2	317 23 24·2	......	......	......	......	+0 18·4	8·8	......	+38 38 27·0
	12 Canum Venat. S.P.	19·0	23·5	0·0	215 22 21·2	......	33·5	29·57	38·4	−9 38·9	......	......	+39 10 32·7
	α Ursæ Minoris	47·0	52·5	+0·2	267 34 50·0	......	......	......	......	−0 37·9	10·5	......	+88 27 57·5

(a) At $3^h 48^m 50^s$.
(b) At $4^h 17^m 17^s$.
(c) At $4^h 18^m 15^s$.
(d) At $4^h 18^m 55^s$.
(e) At $4^h 23^m 30^s$.
(f) At $0^h 57^m 0^s$.
(g) At Wire IV.
(h) 1^m after transit.
(i) At $0^h 57^m 40^s$.
(k) 54^s after transit.
(l) 36^s after transit.
(m) At Wire V.
(n) At Wire I.
(o) At $20^h 24^m 45^s$.
(p) At $10^h 32^m 8^s$.
(q) At $0^h 59^m 30^s$.
(r) At $11^h 19^m 45^s$.
(s) At $11^h 20^m 47^s$.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		"	"	"	° ′ "	"	°	In.	°	′ "	"	"	° ′ "
Nov. 18	Mars Centre	56·8	61·5	−0·5	351 45 58·6	......	......	......	......	+1 15·3	......	9·6	+ 4 14 55·7
	β Leonis	38·9	43·1	−0·4	340 33 40·6	......	34·0	29·67	36·4	+0 50·8	8·6	......	+15 27 38·2
	(a) γ Ursæ Majoris	34·8	39·1	+0·5	301 27 37·5	+ 0·2	......	......	......	+0 1·4	10·3	......	+54 34 30·5
	(b) Moon South L.	55·2	....	−0·5	1 23 57·2	+13·4	......	......	......	+1 48·6	......	......	− 5 23 49·6
	(c)	6·6	....	−0·5	1 24 8·6	0·0	......	......	......	+1 48·6	......	......	− 5 23 47·6
	(d)	17·5	22·5	−0·5	1 24 19·5	−10·7	34·0	29·68	36·3	+1 48·6	......	......	− 5 23 47·8
	α Coronæ Borealis	25·3	30·8	−0·1	328 46 27·9	......	......	......	......	+0 32·6	10·0	......	+27 15 9·1
Nov. 19	Sun North L.	37·5	40·2	−0·4	15 16 38·4	......	37·1	29·70	38·4	+3 40·8	......	10·0	−19 18 9·2
	Venus Centre	24·2	29·2	−0·3	20 50 26·4	......	38·6	29·71	39·5	+5 49·1	......	......	−24 54 5·5
	(e) δ Ursæ Minoris	3·0	10·9	+0·2	269 27 7·1	+ 0·1	38·7	......	......	−0 35·0	9·6	......	+86 35 37·8
Nov. 20	ε Ursæ Minoris	19·0	26·0	+0·3	273 45 22·8	......	42·5	29·57	43·1	−0 28·9	9·6	......	+82 17 16·1
	α Ophiuchi	22·8	29·2	−0·4	343 20 25·6	......	......	......	......	+0 54·8	9·6	......	+12 40 49·6
	Venus Centre	31·4	35·2	−0·3	20 53 33·0	......	42·2	29·59	43·0	+5 47·0	......	......	−24 57 10·0
	γ Aquilæ	16·9	23·0	−0·5	345 47 19·4	......	41·1	29·58	42·0	+0 59·9	11·3	......	+10 13 50·7
Nov. 21	(f) λ Ursæ Minoris	27·2	33·0	+0·2	267 12 30·3	+ 7·3	43·0	29·01	42·7	−0 36·9	9·8	......	+88 50 9·3
Nov. 24	Sun South L.	21·3	26·0	−0·3	16 53 23·4	......	46·1	29·86	46·5	+4 4·3	......	9·4	−20 55 18·3
	β Draconis	43·8	51·2	+0·4	303 36 47·9	......	47·0	......	......	+0 3·6	9·2	......	+52 25 17·9
	γ Draconis	23·5	30·6	+0·4	304 31 27·4	......	......	......	......	+0 4·5	10·4	......	+51 30 37·5
	Venus Centre	7·2	13·5	−0·3	20 58 10·1	......	47·0	29·89	47·8	+5 49·5	......	......	−25 1 50·2
	δ Ursæ Minoris	3·6	11·5	+0·2	269 27 7·7	......	......	......	......	−0 34·6	9·3	......	+86 35 36·3
	α Lyræ	22·0	28·9	+0·2	317 23 25·7	......	......	......	......	+0 18·2	8·7	......	+38 38 25·5
	α Ursæ Minoris	43·8	49·0	+0·2	267 34 46·6	......	46·0	29·96	46·9	−0 37·4	9·4	......	+88 28 0·2
Nov. 26	Sun North L.	8·2	12·7	−0·3	16 44 10·2	......	43·9	30·07	44·9	+4 4·4	......	9·4	−20 46 5·2
	α Ursæ Minoris	43·5	49·4	+0·2	267 34 46·7	......	40·7	30·09	42·9	−0 38·0	9·5	......	+88 28 0·7
	⚹ R. A. 1^h 8^m 31^s	41·9	47·4	+0·2	318 37 44·9	......	......	......	......	+0 20·0	......	......	+37 24 4·5
	θ^1 Ceti	17·8	23·0	−0·5	5 0 19·9	......	......	......	......	+2 6·7	10·4	......	− 9 0 17·2
	⚹ R. A. 1^h 33^m 14^s	24·5	29·2	0·0	325 41 26·8	......	......	......	......	+0 28·6	......	......	+30 20 14·0
	⚹ R. A. 1^h 37^m 4^s	29·7	34·5	−0·1	327 39 32·0	......	......	......	......	+0 31·1	......	......	+28 22 6·3
	α Ceti	56·1	62·1	−0·5	352 32 58·6	......	38·8	30·08	40·9	+1 17·7	9·6	......	+ 3 27 53·1
	α Persei	23·5	30·2	+0·4	306 44 27·3	......	38·5	......	......	+0 7·0	8·2	......	+49 17 35·1
Nov. 27	Sun South L.	19·2	23·5	−0·3	17 27 21·0	......	36·3	30·06	41·4	+4 22·2	......	9·2	−21 29 34·0
	γ Draconis	24·0	29·6	+0·4	304 31 27·2	......	......	......	......	+0 4·7	9·5	......	+51 30 37·3
	ζ Cygni	47·2	52·6	0·0	326 26 49·9	......	36·7	30·04	41·0	+0 29·7	8·7	......	+29 34 49·6
	α Cephei	6·9	14·4	+0·5	294 7 11·1	......	......	......	......	−0 6·3	8·6	......	+61 55 4·4
	α Ursæ Minoris	43·9	50·0	+0·2	267 34 47·2	......	36·0	30·02	40·0	−0 38·2	10·1	......	+88 28 0·2
	(a) ⚹ R. A. 1^h 33^m 14^s	22·8	27·0	0·0	325 41 24·9	0·0	......	......	......	+0 28·8	......	......	+30 20 15·5
	⚹ R. A. 1^h 37^m 4^s	28·8	34·0	−0·1	327 39 31·3	......	35·3	......	......	+0 31·4	......	......	+28 22 6·5
Nov. 28	Sun North L.	39·1	43·1	−0·3	17 5 40·8	......	......	......	......	+4 11·1	......	8·5	−21 7 43·4
	η Draconis	45·1	52·0	+0·5	294 9 49·1	......	41·9	29·93	42·5	−0 6·1	8·4	......	+61 52 25·5
	(g) ε Ursæ Minoris	21·3	28·7	+0·3	273 45 25·3	+ 0·1	......	......	......	−0 29·2	9·2	......	+82 17 12·3
	α Herculis	42·1	46·9	−0·4	341 26 44·1	......	42·0	29·92	43·2	+0 52·0	8·4	......	+14 34 32·4
	(h) δ Ursæ Minoris	4·0	11·9	+0·2	269 27 8·1	+ 0·1	......	......	......	−0 34·9	8·5	......	+86 35 35·2
	Venus Centre	51·0	56·0	−0·3	20 50 53·2	......	42·5	29·91	43·8	+5 48·8	......	......	−24 54 33·5
	(i) α Ursæ Minoris	41·3	47·0	+0·2	267 34 44·4	+ 0·1	39·9	29·85	41·8	−0 37·7	8·2	......	+88 28 1·7
Nov. 30	(k) Sun South L.	2·5	8·0	−0·3	17 58 5·0	− 2·2	51·9	29·48	51·7	+4 19·4	......	8·9	−22 0 13·3
	(l) ε Ursæ Minoris	21·1	28·8	+0·3	273 45 25·2	+ 0·1	......	......	......	−0 28·3	9·3	......	+82 17 11·9
	α Ophiuchi	24·0	31·2	−0·4	343 20 27·2	......	52·0	29·51	51·9	+0 53·7	8·3	......	+12 40 48·0
	γ Draconis	24·6	31·2	+0·4	304 31 28·3	......	......	......	......	+0 4·4	9·4	......	+51 30 36·2

(a) At Wire IV.
(b) At 12^h 6^m 54^s.
(c) At 12^h 7^m 46^s.
(d) At 12^h 8^m 27^s.
(e) At 18^h 24^m 40^s.
(f) At 20^h 34^m 30^s.
(g) At 17^h 4^m 15^s.
(h) At 18^h 24^m 50^s.
(i) At 1^h 4^m 50^s.
(k) At 16^h 29^m 0^s.
(l) At 17^h 4^m 12^s.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Nov. 30	δ Ursæ Minoris	4·0	12·0	+0·2	269 27 8·2	......	......	......	......	− 0 33·9	8·9	8·9	+86 35 34·6
	(a) Venus Centre	48·0	54·0	−0·3	20 42 50·7	− 0·1	50·8	29·52	51·2	+ 5 33·6	......	......	−24 46 15·3
	(b) λ Ursæ Minoris	22·5	29·4	+0·2	267 12 26·1	+11·6	49·7	29·51	49·8	− 0 37·1	8·9	......	+88 50 8·3
	(c) Moon South L.	57·5	....	−0·4	11 44 59·5	− 3·4	......	......	......	+ 2 51·6	......	......	−15 45 38·8
	(d)	45·6	50·4	−0·4	11 44 47·6	+ 7·6	48·9	29·51	49·3	+ 2 51·6	......	......	−15 45 37·9
	(e) α Ursæ Minoris	38·8	46·1	+0·2	267 34 42·7	+ 0·1	48·0	29·46	48·6	− 0 36·6	8·1	......	+88 28 2·7
	(a) α Coronæ Borealis	28·0	34·0	−0·1	328 46 30·9	0·0	44·8	29·45	46·5	+ 0 31·7	8·6	......	+27 15 6·3
	η Draconis	46·4	54·5	+0·5	294 9 51·0	......	......	......	......	− 0 6·0	9·7	......	+61 52 23·9
Dec. 1	Sun North L.	57·8	64·2	−0·3	17 35 0·7	......	44·7	29·45	45·8	+ 4 15·2	......	9·2	−21 37 6·7
	(f) Venus Centre	36·4	42·3	−0·3	20 37 39·1	− 0·8	......	......	......	+ 5 34·5	......	......	−24 41 3·6
	ζ Aquilæ	19·4	26·3	−0·4	342 23 22·5	......	44·7	29·47	45·7	+ 0 52·6	9·7	......	+13 37 54·1
	(g) λ Ursæ Minoris	34·0	41·0	+0·2	267 12 37·7	+ 0·4	43·5	29·50	45·5	− 0 37·5	8·8	......	+88 50 8·6
	(h) Moon South L.	36·0	....	−0·5	6 24 38·3	−11·4	......	......	......	+ 2 12·1	......	......	−10 24 29·8
	(i)	25·3	....	−0·5	6 24 27·6	+ 2·2	......	......	......	+ 2 12·1	......	......	−10 24 32·7
	(k)	13·5	19·0	−0·5	6 24 15·8	+12·5	42·6	29·53	44·3	+ 2 12·1	......	......	−10 24 31·2
	∗ R. A. $22^h\ 31^m\ 51^s$	42·0	48·4	+0·4	304 29 45·6	......	......	......	......	+ 0 4·5	......	......	+51 32 19·1
	(l) ∗ R. A. $22^h\ 33^m\ 47^s$	34·8	40·4	+0·4	304 34 38·0	+ 0·1	......	......	......	+ 0 4·6	......	......	+51 27 26·5
	(m) α Piscis Australis	48·5	54·0	−0·2	26 17 51·1	− 0·7	42·0	29·54	43·6	+12 17·6	......	......	−30 27 58·8
	(n) α Ursæ Minoris	40·7	46·7	+0·2	267 34 43·9	+ 0·1	42·0	29·57	43·3	− 0 37·2	9·0	......	+88 28 2·4
	∗ R. A. $1^h\ 33^m\ 14^s$	24·2	28·9	0·0	325 41 26·5	......	......	......	.....	+ 0 28·0	......	......	+30 20 14·7
	∗ R. A. $1^h\ 37^m\ 4^s$	30·0	35·0	−0·1	327 39 32·4	......	......	......	......	+ 0 30·5	......	......	+28 22 6·3
	∗ R. A. $3^h\ 5^m\ 2^s$	56·9	63·4	−0·2	333 39 59·9	......	42·0	29·60	43·0	+ 0 38·8	......	......	+22 21 30·5
	ζ Ursæ Minoris S.P.	43·9	51·0	+0·1	254 19 47·6	......	42·0	29·62	43·1	− 1 0·0	9·4	......	+78 16 38·4
Dec. 2	Sun South L.	5·0	9·8	−0·3	18 16 7·1	......	39·5	29·93	41·4	+ 4 37·1	......	9·1	−22 18 35·1
	(o) ε Ursæ Minoris	22·5	29·5	+0·3	273 45 26·3	+ 0·5	......	......	......	− 0 29·4	9·1	......	+82 17 11·7
	β Draconis	46·5	53·2	+0·4	303 36 50·2	......	......	......	......	+ 0 3·7	9·0	......	+52 25 15·2
	δ Ursæ Minoris	5·7	13·5	+0·2	269 27 9·8	......	......	......	......	− 0 35·1	8·7	......	+86 35 34·4
	α Lyræ	24·4	30·6	+0·2	317 23 27·7	......	40·4	29·94	42·3	+ 0 18·5	9·0	......	+38 38 22·9
	(p) Nadir	46·8 42·7	49·5 44·3	+0·5	120 4 46·3	......	......	......	......	....	9·5	......	....
	....	47·2 42·0	49·9 44·8	+0·5	120 4 46·5	......	......	......	......	....	9·7	......	....
	(q) ∗ R. A. $22^h\ 33^m\ 47^s$	33·5	39·2	+0·4	304 34 36·8	+ 0·2	......	......	......	+ 0 4·7	......	......	+51 27 27·4
	(a) α Piscis Australis	25·5	31·0	−0·2	26 17 28·0	− 0·2	39·0	30·06	42·5	+12 35·3	......	......	−30 27 54·0
	(r) Moon South L.	17·4	....	−0·5	0 32 19·7	−12·6	......	......	......	+ 1 45·1	......	......	− 4 31 43·1
	(s)	59·4	....	−0·5	0 32 1·7	+ 3·7	......	......	......	+ 1 45·1	......	......	− 4 31 41·4
	(t)	51·9	57·6	−0·5	0 31 54·2	+13·1	......	......	......	+ 1 45·1	......	......	− 4 31 43·3
	Uranus	34·4	38·9	−0·5	2 3 36·2	......	39·0	30·07	42·5	+ 1 51·9	......	......	− 6 3 19·0
	(u) α Ursæ Minoris	14·1	21·0	+0·2	267 34 17·8	+25·9	37·7	30·10	41·7	− 0 38·2	7·9	......	+88 28 3·6
	(x) Nadir	42·0 47·0	43·3 48·7	+0·5	120 4 45·7	......	......	......	......	....	8·9	......	....
	....	47·1 43·0	49·2 44·4	+0·5	120 4 46·4	......	......	......	......	....	9·6	......	....
	∗ R. A. $3^h\ 5^m\ 2^s$	56·4	62·1	−0·2	333 39 59·1	......	36·2	......	......	+ 0 39·9	......	......	+22 21 30·1
	ζ Ursæ Minoris S.P.	46·0	52·5	+0·1	254 19 49·4	......	36·1	30·09	41·2	− 1 1·7	9·9	......	+78 16 38·6
Dec. 3	(y) Nadir	43·3 48·1	44·7 50·0	+0·5	120 4 47·0	......	......	......	......	....	10·2	......	....
	(z)	43·2 48·5	44·6 50·1	+0·5	120 4 47·1	......	......	......	......	....	10·3	......	....
	....	42·7 47·5	44·5 49·7	+0·5	120 4 46·6	......	......	......	......	....	9·8	......	....
Dec. 5	(aa) Nadir	42·2 47·0	44·5 50·0	+0·5	120 4 46·4	......	......	......	......	....	9·6	......	....

(a) At Wire IV.
(b) At $20^h\ 38^m\ 0^s$.
(c) At $21^h\ 32^m\ 54^s$.
(d) At $21^h\ 33^m\ 50^s$.
(e) At $1^h\ 4^m\ 40^s$.
(f) 1^m after transit.
(g) At $20^h\ 23^m\ 40^s$.
(h) At $22^h\ 19^m\ 16^s$.
(i) At $22^h\ 20^m\ 15^s$.
(k) At $22^h\ 21^m\ 1^s$.
(l) On Wire IV.; at $22^h\ 35^m\ 14^s$.
(m) At Wire V.
(n) At $1^h\ 4^m\ 36^s$.
(o) At $17^h\ 4^m\ 45^s$.
(p) At $19^h\ 30^m\ 0^s$.
(q) 42^s after transit.
(r) At $23^h\ 5^m\ 51^s$.
(s) At $23^h\ 6^m\ 57^s$.
(t) At $23^h\ 7^m\ 36^s$.
(u) On Wire V.; at $1^h\ 25^m\ 54^s$.
(x) At $2^h\ 30^m\ 0^s$.
(y) At $17^h\ 50^m\ 0^s$.
(z) At $1^h\ 50^m\ 0^s$.
(aa) At $18^h\ 10^m\ 0^s$

Date.	OBJECT OBSERVED.	Microscope. I.	Microscope. II.	Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point observed.	Equatorial Point adopted.	Apparent Declination observed.
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Dec. 5	Nadir ……	42·9 47·0	45·3 50·1	+0·5	120 4 46·8	……	……	……	……	……	10·0	……	……
Dec. 6	(a) Nadir ……	43·0 48·7	44·4 50·5	+0·5	120 4 47·1	……	……	……	……	……	10·3	10·1	……
	……	42·3 48·0	44·2 50·1	+0·5	120 4 46·7	……	……	……	……	……	9·9	……	……
	(b) θ¹ Arietis ……	27·6	34·6	−0·3	336 51 30·8	0·0	45·8	29·33	45·7	+0 42·9	……	……	+19 9 56·4
	♆ Arietis ……	20·4	25·2	−0·4	339 1 22·4	……	……	……	……	+0 46·4	……	……	+17 0 1·3
Dec. 7	(c) Nadir ……	43·1 47·2	45·0 50·0	+0·5	120 4 46·8	……	……	……	……	……	10·0	10·1	……
	……	42·5 46·5	45·1 49·3	+0·5	120 4 46·3	……	……	……	……	……	9·5	……	……
	(d) Moon South L. ……	14·2	20·1	−0·2	332 7 16·9	+1·1	42·6	28·75	44·6	+0 35·5	……	……	+23 54 16·6
Dec. 8	(e) Nadir ……	48·3 43·0	50·7 45·0	+0·5	120 4 47·3	……	……	……	……	……	10·5	……	……
	……	48·1 42·8	50·6 45·0	+0·5	120 4 47·1	……	……	……	……	……	10·3	……	……
Dec. 9	Sun North L. ……	10·9	15·8	−0·3	18 34 13·1	……	38·9	29·31	42·4	+4 38·8	……	9·5	−22 36 42·4
	β Draconis ……	49·4	56·0	+0·4	303 36 53·1	……	……	……	……	+0 3·6	9·5	……	+52 25 12·8
	(f) γ Draconis ……	28·1	33·7	+0·4	304 31 31·3	+0·4	……	……	……	+0 4·5	10·0	……	+51 30 33·3
	δ Ursæ Minoris ……	7·4	15·4	+0·2	269 27 11·6	……	40·0	29·34	42·5	−0 34·4	9·2	……	+86 35 32·3
	α Lyræ ……	27·0	33·1	+0·2	317 23 30·3	……	……	……	……	+0 18·1	9·4	……	+38 38 21·1
	Venus Centre ……	3·0	8·6	−0·3	19 30 5·5	……	39·0	29·36	42·4	+5 2·9	……	……	−23 33 58·9
	(g) Nadir ……	48·0 42·7	50·6 45·5	+0·5	120 4 47·2	……	……	……	……	……	10·4	……	……
	(h) ……	43·4 48·0	45·1 49·5	+0·5	120 4 47·0	……	……	……	……	……	10·2	……	……
	η Draconis S.P. ……	17·9	24·5	+0·1	237 56 21·3	……	39·5	29·43	41·3	−1 50·2	9·5	……	+61 52 21·6
	(i) ε Ursæ Minoris S.P.	8·1	14·5	+0·1	258 20 11·4	−1·4	……	……	……	−0 52·2	8·5	……	+82 17 8·3
	α Aurigæ R. ……	22·2	22·8	+0·5	109 57 23·0	……	38·5	29·43	41·2	−0 10·5	7·5	……	+45 49 49·4
	β Tauri ……	29·7	35·9	−0·1	327 33 32·7	……	……	……	……	+0 30·5	10·0	……	+28 28 6·3
	β Draconis S.P. ……	12·8	19·5	+0·1	228 30 16·2	……	……	……	……	−2 53·6	10·5	……	+52 25 13·1
	(b) 136 Tauri ……	24·2	30·4	−0·1	328 27 27·2	0·0	……	……	……	+0 31·5	……	……	+27 34 10·8
	(b) γ Draconis S.P. ……	43·9	49·3	+0·1	227 35 46·7	−0·1	……	……	……	−3 3·0	10·0	……	+51 30 34·1
	(k) Moon North L. ……	0·6	……	−0·1	328 55 3·6	−0·7	……	……	……	+0 32·1	……	……	+27 6 34·5
	(l) ……	2·7	8·9	−0·1	328 55 5·7	−1·8	39·7	29·42	41·6	+0 32·1	……	……	+27 6 33·5
Dec. 10	ζ Ursæ Minoris S.P.	39·9	46·8	+0·1	254 19 43·5	……	43·9	29·65	44·5	−0 59·8	8·9	9·7	+78 16 34·0
	(m) Nadir ……	43·1 47·4	44·7 49·7	+0·5	120 4 46·7	……	……	……	……	……	9·9	……	……
	……	43·2 47·3	45·0 50·1	+0·5	120 4 46·9	……	……	……	……	……	10·1	……	……
	η Draconis S.P. ……	16·8	24·0	+0·1	237 56 20·5	……	……	……	……	−1 50·0	9·4	……	+61 52 20·8
	μ Geminorum ……	4·7	10·1	−0·2	333 26 7·2	……	43·9	29·66	44·0	+0 38·4	9·5	……	+22 35 24·1
	ε Geminorum ……	32·0	38·0	−0·1	330 44 34·9	……	……	……	……	+0 34·6	……	……	+25 17 0·2
	α Canis Majoris ……	9·0	13·2	−0·4	12 29 10·7	……	……	……	……	+3 2·0	11·6	……	−16 30 3·0
	ζ Geminorum ……	31·2	35·8	−0·3	335 13 33·2	……	……	……	……	+0 41·1	……	……	+20 47 55·4
	(n) δ Geminorum ……	15·0	21·1	−0·2	333 45 17·8	+1·1	……	……	……	+0 38·9	8·7	……	+22 16 11·9
	(o) Moon North L. ……	55·8	62·8	−0·1	331 0 59·2	+7·1	……	……	……	+0 35·0	……	……	+25 0 28·4
	(p) Moon South L. ……	57·1	64·1	−0·2	331 35 0·4	−7·2	43·0	29·67	44·3	+0 35·8	……	……	+24 26 40·7
Dec. 11	β Draconis ……	49·9	57·7	+0·4	303 36 54·2	……	38·9	29·73	41·9	+0 3·7	10·0	9·6	+52 25 11·7

(a) At 18^h 0^m 0^s.
(b) At Wire IV.
(c) At 18^h 20^m 0^s.
(d) At 3^h 41^m 15^s.

(e) At 18^h 50^m 0^s.
(f) 45^s after transit.
(g) At 19^h 50^m 0^s.
(h) At 2^h 20^m 0^s.

(i) At Wire II.
(k) At 6^h 3^m 16^s.
(l) At 6^h 3^m 53^s.
(m) At 4^h 5^m 0^s.

(n) 1^m before transit.
(o) At 7^h 12^m 36^s.
(p) At 7^h 14^m 23^s.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		″	″	″	° ′ ″	″	°	In.	°	′ ″	″	″	° ′ ″
Dec. 11	γ Draconis	27·9	34·0	+0·4	304 31 31·3	......	......	......	......	+0 4·6	9·1	9·6	+51 30 33·7
	(a) Lyræ	26·5	32·8	+0·2	317 23 29·9	+ 0·7	38·8	29·72	41·9	+0 18·4	9·4	......	+38 38 20·6
	ζ Ursæ Majoris S.P.	42·7	49·4	+0·1	231 49 46·2	......	......	......	......	−2 27·8	......	......	+55 45 8·8
	(b) α Ursæ Minoris	22·3	28·4	+0·2	267 34 25·6	+17·4	37·4	29·77	40·2	−0 37·8	9·7	......	+88 28 4·4
	(c) Nadir	43·1 48·0	44·0 49·7	+0·5	120 4 46·7	......	......	......	......	....	9·9	......	....
	....	43·0 48·0	44·3 49·7	+0·5	120 4 46·7	......	......	......	......	....	9·9	......	....
	⁎ R. A. 3h 5m 2s	57·1	62·9	−0·2	333 39 59·8	......	37·8	29·78	39·9	+0 39·4	......	......	+22 21 30·4
Dec. 12	α Cephei	8·9	17·0	+0·5	294 7 13·7	......	35·4	29·95	39·0	−0 6·3	9·5	......	+61 55 2·2
Dec. 14	Sun South L.	48·5	53·8	−0·3	19 28 50·7	......	32·6	30·02	37·2	+5 13·4	......	10·0	−23 31 54·1
	α Lyræ	28·9	34·1	+0·2	317 23 31·5	......	32·9	30·01	37·8	+0 18·8	9·9	......	+38 38 19·7
	(d) Nadir	43·5 47·5	44·2 49·4	+0·5	120 4 46·6	......	......	......	......	....	9·8	......	....
	....	43·0 47·6	45·0 49·9	+0·5	120 4 46·9	......	......	......	......	....	10·1	......	....
	γ Aquilæ	17·6	23·0	−0·5	345 47 20·1	......	......	......	......	+1 1·8	10·8	......	+10 13 48·1
	α Aquilæ	50·9	56·8	−0·5	347 33 53·2	......	32·9	30·01	37·8	+1 5·8	8·6	......	+ 8 27 11·0
	Venus Centre	13·7	17·8	−0·3	18 25 15·5	......	32·9	......	......	+4 45·4	......	......	−22 27 50·9
	α Aurigæ R.	26·7	25·8	+0·5	109 57 27·1	......	33·0	30·08	37·0	−0 10·8	10·5	......	+45 49 52·7
Dec. 15	(e) α Persei	19·5	24·9	+0·4	306 44 22·5	+ 0·6	29·5	30·07	31·8	+0 7·1	7·4	9·0	+49 17 38·8
	η Tauri	46·9	51·7	−0·2	332 24 49·1	......	......	......	......	+0 38·6	9·6	......	+23 36 41·3
	(f) Nadir	44·1 48·5	44·6 49·7	+0·5	120 4 47·2	......	......	......	......	....	10·4	......	....
	....	43·5 48·6	44·0 48·8	+0·5	120 4 46·7	......	......	......	......	....	9·9	......	....
	(g) η Draconis S.P.	19·8	25·5	+0·1	237 56 22·9	0·0	......	......	......	−1 55·0	8·6	......	+61 52 18·9
	α Tauri	4·4	9·5	−0·4	339 50 6·6	......	29·0	30·05	31·6	+0 50·7	8·2	......	+16 11 11·7
	(h) ε Ursæ Minoris S.P.	9·0	14·6	+0·1	258 20 11·9	− 1·5	......	......	......	−0 54·5	8·9	......	+82 17 6·9
	α Aurigæ R.	25·9	24·4	+0·5	109 57 25·9	......	28·0	30·04	31·2	−0 10·9	9·0	......	+45 49 52·4
Dec. 16	α Lyræ	29·0	33·2	+0·2	317 23 31·1	......	34·9	29·80	35·7	+0 18·6	8·7	9·8	+38 38 20·1
	γ Aquilæ	19·7	24·2	−0·5	345 47 21·7	......	......	......	......	+1 1·3	11·6	......	+10 13 46·8
	α Aquilæ	52·8	57·5	−0·5	347 33 54·5	......	33·8	29·78	35·7	+1 5·2	9·0	......	+ 8 27 10·1
	Venus Centre	49·0	53·7	−0·3	17 54 51·0	......	33·9	29·78	35·5	+4 31·1	......	......	−21 57 12·3
	(i) Nadir	42·5 48·2	44·0 49·5	+0·5	120 4 46·5	......	......	......	......	....	9·7	......	....
	....	43·0 48·0	45·0 48·8	+0·5	120 4 46·7	......	......	......	......	....	9·9	......	....
Dec. 17	(k) α Persei	18·5	25·3	+0·4	306 44 22·2	0·0	39·0	29·66	39·8	+0 6·9	6·6	9·1	+49 17 40·0
	η Tauri	47·5	52·7	−0·2	332 24 49·9	......	......	......	......	+0 37·3	9·1	......	+23 36 41·9
	(l) Nadir	42·9 48·0	44·0 49·8	+0·5	120 4 46·7	......	......	......	......	....	9·9	......	....
	....	43·0 47·5	45·1 49·0	+0·5	120 4 46·6	......	......	......	......	....	9·8	......	....
	(e) Aurigæ R.	24·6	24·7	+0·5	109 57 25·4	− 1·0	38·8	29·67	39·8	−0 10·5	7·7	......	+45 49 51·2
	β Tauri	28·5	34·4	−0·1	327 33 31·2	......	......	......	......	+0 30·7	9·1	......	+28 28 7·2
	α Virginis	41·0	45·9	−0·5	6 19 42·9	......	36·1	29·62	38·6	+2 13·8	9·1	......	−10 19 47·6
	(m) α Ursæ Minoris S.P.	16·0	22·2	+0·2	264 31 19·5	−21·3	......	......	......	−0 42·3	10·3	......	+88 28 6·8
	(n) Moon South L.	45·8	....	−0·4	11 12 47·9	+ 9·0	......	......	......	+2 51·8	......	......	−15 13 39·6
	(o)	3·5	....	−0·4	11 13 5·6	− 7·0	......	......	......	+2 51·8	......	......	−15 13 41·3
	(p)	10·4	15·9	−0·4	11 13 12·5	−17·5	......	......	......	+2 51·8	......	......	−15 13 37·7

(a) 1m after transit.
(b) At 1h 21m 45s.
(c) At 1h 40m 0s.
(d) At 18h 50m 0s.
(e) At Wire V.
(f) At 4h 10m 0s.
(g) 20s after transit.
(h) At 5h 0m 12s.
(i) At 3h 40m 0s.
(k) 15s after transit.
(l) At 4h 0m 0s.
(m) At 13h 22m 53s.
(n) At 13h 26m 10s.
(o) At 13h 27m 22s.
(p) At 13h 28m 6s.

Date.	OBJECT OBSERVED.	Microscope.		Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point		Apparent Declination observed.
		I.	II.								observed.	adopted.	
		"	"	"	° ′ "	"	°	In.	°	′ "	"	"	° ′ "
Dec. 17	η Ursæ Majoris	47·6	54·3	+0·4	305 55 51·4	......	......	......	......	+0 6·1	10·3	9·1	+50 6 11·6
	η Bootis	43·0	49·2	−0·3	336 49 45·8	......	36·1	29·64	38·5	+0 44·2	8·8	......	+19 11 39·1
Dec. 18	Sun North L.	20·2	25·4	−0·3	19 6 22·7	......	38·0	29·62	38·7	+4 55·6	......	......	−23 9 9·2
	Venus Centre	57·0	61·9	−0·3	17 21 59·4	......	37·6	29·58	38·9	+4 15·9	......	......	−21 24 6·2
Dec. 20	(*a*) γ Draconis	32·2	36·9	+0·4	304 31 35·1	+0·2	33·9	30·17	36·0	+0 4·7	9·9	9·5	+51 30 29·5
Dec. 21	α Lyræ	30·1	35·3	+0·2	317 23 32·7	......	......	......	......	+0 18·8	9·1	......	+38 38 18·0
	γ Draconis	32·0	37·2	+0·4	304 31 35·2	......	......	......	......	+0 4·7	9·5	......	+51 30 29·6
Dec. 22	Sun South L.	48·8	52·8	−0·3	19 40 50·6	......	35·2	30·13	36·9	+5 18·7	......	9·1	−23 44 0·2
	δ Ursæ Minoris	11·1	18·5	+0·2	269 27 15·3	......	......	......	......	−0 35·7	7·5	......	+86 35 29·5
	α Lyræ	30·2	35·1	+0·2	317 23 32·7	......	......	......	......	+0 18·8	8·9	......	+38 38 17·6
	α Aquilæ	53·6	59·9	−0·5	347 33 56·1	......	35·8	30·11	37·3	+1 5·6	10·2	......	+ 8 27 7·4
	Venus Centre	47·9	52·0	−0·4	16 8 49·4	......	34·5	30·10	37·0	+3 59·2	......	......	−20 10 39·5
	(*b*) Mercury Centre	1·9	4·9	−0·4	16 9 2·9	−0·4	29·8	29·88	34·2	+3 59·8	......	......	−20 10 53·2
	γ Draconis	32·7	38·0	+0·4	304 31 35·9	......	......	......	......	+0 4·7	9·8	......	+51 30 28·5
Dec. 23	Sun North L.	55·6	60·2	−0·3	19 7 57·3	......	31·7	29·87	34·9	+5 2·9	......	10·2	−23 10 50·0
	δ Ursæ Minoris	13·0	20·2	+0·2	269 27 17·1	......	......	......	......	−0 35·7	9·0	......	+86 35 28·8
	α Lyræ	31·8	37·0	+0·2	317 23 34·4	......	......	......	......	+0 18·8	10·3	......	+38 38 17·0
	Venus Centre	12·4	16·1	−0·4	15 49 13·8	......	30·6	29·84	34·4	+3 53·4	......	......	−19 50 57·0
	(*c*) ζ Pegasi	49·8	55·1	−0·5	346 0 52·1	−0·1	30·4	29·86	34·6	+1 2·4	10·4	......	+10 0 15·8
	(*d*) β Draconis	55·2	62·1	+0·4	303 36 59·3	0·0	29·0	30·01	33·9	+0 3·8	10·6	......	+52 25 7·1
	γ Draconis	33·8	39·0	+0·4	304 31 37·0	......	......	......	......	+0 4·7	10·5	......	+51 30 28·5
Dec. 24	Sun South L.	7·0	11·4	−0·3	19 39 8·8	......	29·9	30·02	34·0	+5 20·3	......	9·9	−23 42 19·2
	α Lyræ	31·0	35·6	+0·2	317 23 33·3	......	30·3	......	......	+0 18·9	9·0	......	+38 38 17·7
	Venus Centre	59·0	63·5	−0·4	15 29 0·7	......	31·7	30·05	34·6	+3 49·1	......	......	−19 30 39·9
	(*e*) Nadir	43·5 49·1	43·7 50·1	+0·5	120 4 47·1	......	......	......	......	....	10·3	......	....
	....	44·0 49·0	45·5 49·8	+0·5	120 4 47·5	......	......	......	......	....	10·7	......	....
	α Aurigæ R.	27·9	26·9	+0·5	109 57 28·2	......	36·1	30·15	36·6	−0 10·8	10·2	......	+45 49 53·9
	β Draconis S.P.	13·6	19·4	+0·1	228 30 16·6	......	36·8	......	......	−2 59·0	10·3	......	+52 25 7·7
	γ Draconis S.P.	44·0	48·9	+0·1	227 35 46·6	......	36·4	30·15	36·7	−3 8·7	9·3	......	+51 30 28·0
	(*f*) γ Draconis	32·0	36·5	+0·4	304 31 34·8	+1·8	35·9	30·17	36·7	+0 4·7	9·7	......	+51 30 28·6
Dec. 26	Sun North L.	16·1	20·0	−0·3	19 3 17·5	......	35·5	30·24	36·5	+5 2·1	......	9·6	−23 6 10·0
	(*g*) δ Ursæ Minoris	13·6	21·0	+0·2	269 27 17·8	+0·3	......	......	......	−0 35·8	8·9	......	+86 35 27·3
	α Lyræ	31·9	36·9	+0·2	317 23 34·4	......	......	......	......	+0 18·9	9·3	......	+38 38 16·3
	β Lyræ	51·1	56·7	+0·1	322 50 54·1	......	......	......	......	+0 25·4	8·8	......	+33 10 50·1
	α Aquilæ	54·2	59·1	−0·5	347 33 56·0	......	36·7	30·26	37·8	+1 5·8	9·7	......	+ 8 27 7·8
	Venus Centre	56·7	61·4	−0·4	14 46 58·9	......	36·5	30·29	37·8	+3 38·0	......	......	−18 48 27·3
	(*h*) Nadir	43·8 48·5	44·5 50·0	+0·5	120 4 47·2	......	......	......	......	....	10·4	......	....
	....	44·0 45·4	48·5 49·2	+0·5	120 4 47·3	......	......	......	......	....	10·5	......	....
Dec. 28	α Tauri	6·9	12·0	−0·4	339 50 9·1	......	35·0	29·89	36·1	+0 49·8	9·5	9·7	+16 11 10·8
	α Aurigæ	2·3	8·1	+0·4	310 12 5·8	......	......	......	......	+0 10·7	10·7	......	+45 49 53·2
	β Orionis	24·8	29·7	−0·5	4 23 26·9	......	......	......	......	+2 3·9	9·4	......	− 8 23 21·1
	(*i*) Nadir	49·1 43·7	49·5 44·0	+0·5	120 4 47·1	......	......	......	......	....	10·3	......	....
	....	49·0 44·0	49·2 44·8	+0·5	120 4 47·2	......	......	......	......	....	10·4	......	....

(*a*) 40^s after transit.
(*b*) At Wire IV.
(*c*) 30^s after transit.
(*d*) 12^s after transit.
(*e*) At $4^h\ 10^m$.
(*f*) $1^m\ 30^s$ after transit.
(*g*) At $18^h\ 25^m\ 30^s$.
(*h*) At $21^h\ 30^m$.
(*i*) At $5^h\ 20^m$.

Date.	OBJECT OBSERVED.	Microscope. I.	Microscope. II.	Correction.	Mean Reading of Circle.	Reduction to Meridian.	Ext. Ther.	Bar.	Att. Ther.	Refraction.	Equatorial Point observed.	Equatorial Point adopted.	Apparent Declination observed.
		"	"	"	° ′ "	"	°	In.	°	′ "	°	"	° ′ "
Dec. 28	β Draconis S.P. ……	10·8	16·5	+0·1	228 30 13·8	……	34·9	29·88	36·2	−2 58·2	9·7	9·7	+52 25 5·9
	δ Ursæ Minoris……	14·9	21·5	+0·2	269 27 18·7	……	……	……	……	−0 35·5	8·8	……	+86 35 26·5
	α Lyræ ……………	32·5	37·6	+0·2	317 23 35·1	……	……	……	……	+0 18·7	9·1	……	+38 38 15·9
Dec. 29	Sun South L. ………	45·1	49·2	−0·3	19 26 47·1	……	36·8	29·97	37·7	+5 9·9	……	9·0	−23 29 48·0
	β Lyræ ……………	51·0	56·9	+0·1	322 50 54·2	……	……	……	……	+0 25·1	7·6	……	+33 10 49·7
	ζ Aquilæ……………	23·0	28·5	−0·4	342 23 25·2	……	37·0	……	……	+0 54·4	9·0	……	+13 37 49·4
	Venus Centre ………	11·3	15·9	−0·4	13 40 13·2	……	36·8	30·00	38·2	+3 20·7	……	……	−17 41 24·9
	(a) Moon South L.……	38·7	43·5	−0·5	2 25 40·7	+1·2	36·7	30·02	37·6	+1 54·0	……	……	− 6 25 26·9
	Uranus ……………	38·5	43·0	−0·5	1 51 40·5	……	36·2	……	……	+1 51·4	……	……	− 5 51 22·9
	✳ R.A. 4h 4m 57s …	16·5	22·2	−0·1	330 10 19·3	……	35·0	30·09	35·9	+0 34·9	……	……	+25 51 14·8
	(b) Nadir ……………	43·4 48·0	43·9 49·1	+0·5	120 4 46·6	……	……	……	……	…………	9·8	……	…………
	(c) ……………………	42·6 47·0	43·7 48·1	+0·5	120 4 45·8	……	……	……	……	…………	9·0	……	…………
	(d) γ Draconis S.P. ……	43·2	47·2	+0·1	227 35 45·4	0·0	35·1	30·11	36·0	−3 9·0	9·6	……	+51 30 27·4
Dec. 30	α Ophiuchi …………	29·9	37·0	−0·4	343 30 33·1	……	41·5	29·45	42·0	+0 55·1	9·1	……	+12 30 40·8
	α Lyræ ……………	32·6	39·5	+0·2	317 23 36·1	……	……	……	……	+0 18·2	8·9	……	+38 38 14·7
Dec. 31	Sun North L.………	23·4	29·0	−0·3	18 46 26·1	……	42·0	29·49	42·8	+4 43·5	……	9·0	−22 49 0·6
	(e) α Aquilæ……………	55·6	62·0	−0·5	347 33 58·2	−0·1	42·0	29·50	42·8	+1 3·5	8·7	……	+ 8 27 7·4
	(f) Nadir ……………	42·8 47·7	44·7 49·9	+0·5	120 4 46·7	……	……	……	……	…………	9·9	……	…………
	……………………	47·0 42·2	49·5 44·5	+0·5	120 4 46·3	……	……	……	……	…………	9·5	……	…………
	(g) α Lyræ ……………	31·8	37·5	+0·2	317 23 34·7	+1·0	45·0	29·43	45·5	+0 18·0	8·0	……	+38 38 15·3

(a) 5s after transit.
(b) At 5h 30m.
(c) At 5h 40m.
(d) 12s before transit.
(e) 30s after transit.
(f) At 22h 50m.
(g) At 18h 33m 18s.

ROYAL OBSERVATORY, EDINBURGH.

MEAN DECLINATIONS OF THE STARS OBSERVED IN THE YEAR 1840, REDUCED TO JANUARY 1, 1840.

α Andromedæ.	
	° ′ ″
Jan. 21	+28 12 26·0
22	25·3
25	24·6
Feb. 12	24·5
15	25·2
24	23·8
26	24·9
Mar. 5	25·4
6	23·7
9	24·8
Nov. 5	24·5
14	24·9

* R.A. $0^{h}\ 1^{m}\ 52^{s}$.	
Oct. 2	+49 54 59·1
7	59·7
9	59·4

γ Pegasi.	
Jan. 15	+14 17 36·3
21	37·7
25	36·3
Feb. 12	37·5
15	37·9
Oct. 11	38·6
Nov. 14	36·8

35 Piscium.	
Oct. 9	+ 7 55 55·3

α Cassiopeæ.	
Jan. 22	+55 39 31·5
24	31·9
25	30·9
Feb. 7	31·7
15	30·2
25	30·8
Mar. 7	30·8
9	31·0
17	30·7

α Cassiopeæ.	
	° ′ ″
Mar. 20	+55 39 31·4
30	32·1
Apr. 21	31·9
Nov. 2	31·0

α Cassiopeæ S.P.	
Mar. 19	+55 39 31·4
Apr. 24	31·6
25	31·3
27	31·7
May 1	32·4

β Ceti.	
Jan. 25	−18 51 56·9
29	57·4

δ Piscium.	
Sept. 13	
Nov. 7	+ 6 42 48·4

ε Piscium.	
Oct. 11	+ 7 1 38·4
Nov. 7	37·6

* R.A. $0^{h}\ 55^{m}\ 37^{s}$.	
Oct. 11	+39 7 55·8
12	55·0
22	55.2

* R.A. $0^{h}\ 59^{m}\ 1^{s}$.	
Nov. 2	+38 23 47·5
7	47·6
11	45·9

* R.A. $1^{h}\ 0^{m}\ 34^{s}$.	
Oct. 12	+38 55 39·8
22	39·7
24	37·8

α Ursæ Minoris.	
	° ′ ″
Jan. 22	+88 27 22·1
24	22·5
25	23·0
27	22·6
29	21·7
30	21·8
Feb. 7	23·1
10	22·7
11	22·4
12	22·1
15	22·3
25	22·0
27	22·2
29	22·3
Mar. 4	24·8
5	22·5
6	22·8
8	20·8
9	22·2
13	23·6
17	22·4
18	20·9
20	23·7
28	22·3
31	22·6
Apr. 3	21·9
4	21·0
21	22·5
22	20·7
26	21·4
27	22·2
29	21·3
May 1	22·7
Sept. 13	21·5
Oct. 11	23·0
12	22·5
19	22·2
22	22·8
24	22·0
Nov. 2	23·3
11	22·0
14	22·7
17	22·0
18	21·2
24	22·1
26	22·0

α Ursæ Minoris.	
	° ′ ″
Nov. 27	+88 27 21·2
28	22·4
30	22·9
Dec. 1	22·3
2	23·3
11	22·0

α Ursæ Minoris S.P.	
Mar. 19	+88 27 22·1
Apr. 24	22·4
25	23·3
27	20·5
May 1	21·3
2	22·5
17	23·3
20	22·6
23	22·3
25	23·2
26	22·2
June 1	23·0
2	21·7
3	22·1
July 26	22·7
27	21·5
28	22·1
30	21·0
Aug. 1	22·1
4	22·2
6	21·3
8	20·4
11	22·4
13	21·4
14	21·6
18	21·9
24	21·8
26	23·1
31	21·5
Sept. 3	22·8
4	21·7
10	21·9
11	21·9
12	22·3
15	21·6
19	23·3

α Ursæ Minoris S.P.	
	° ′ ″
Sept. 21	+88 27 21·7
23	22·0
24	21·4
25	22·5
Oct. 2	21·8
5	21·5
8	22·6
9	22·5
11	21·3
12	22·8
13	22·4
15	21·5
18	22·5
19	22·3
21	20·7
Dec. 17	23·3

* R.A. $1^{h}\ 4^{m}\ 8^{s}$.	
Nov. 2	+38 13 14·5
7	14·8
14	13·9

* R.A. $1^{h}\ 6^{m}\ 22^{s}$	
Oct. 24	+37 38 17·5
Nov. 7	18·7
14	16·8

* R.A. $1^{h}\ 7^{m}\ 53^{s}$.	
Oct. 12	+37 36 51·8
22	52·9
Nov. 14	51·9

* R.A. $1^{h}\ 8^{m}\ 31^{s}$.	
Oct. 24	+37 23 29·1
Nov. 2	29·8
26	29·5

θ^{1} Ceti.	
Nov. 2	− 9 0 40·0
26	41·3

* R.A. $1^h\ 16^m\ 4^s$.	
	° ′ ″
Oct. 24	+34 53 49·4
Nov. 7	50·5
14	49·7

* R.A. $1^h\ 16^m\ 19^s$.	
Oct. 24	+35 7 44·2
Nov. 7	43·4
14	43·2

η Piscium.	
Oct. 11	+14 31 9·9
Nov. 7	7·8

* R.A. $1^h\ 27^m\ 43^s$.	
Oct. 12	+32 2 4·4
Nov. 2	4·3
7	4·4

* R.A. $1^h\ 29^m\ 55^s$.	
Oct. 12	+31 17 38·4
Nov. 2	39·4
7	37·7

* R.A. $1^h\ 32^m\ 53^s$.	
Oct. 12	+31 14 42·0
Nov. 2	41·2
7	42·3

* R.A. $1^h\ 33^m\ 14^s$.	
Nov. 26	+30 19 41·2
27	42·6
Dec. 1	41·5

* R.A. $1^h\ 37^m\ 4^s$.	
Nov. 26	+28 21 34·0
27	34·2
Dec. 1	33·7

β Arietis.	
Jan. 12	+20 1 23·5
Nov. 7	25·1

α Arietis.	
	° ′ ″
Jan. 12	+22 42 10·4
Feb. 27	9·8
Apr. 3	8·1
Nov. 2	9·7

θ¹ Arietis.	
Oct. 12	+19 9 29·4
Dec. 6	27·0

ψ Arietis.	
Oct. 12	+16 59 32·3
Dec. 6	33·1

α Ceti.	
Nov. 26	+ 3 27 28·5

* R. A. $3^h\ 5^m\ 2^s$.	
Dec. 1	+22 21 4·3
2	3·9
11	4·0

α Persei.	
Mar. 18	+49 17 9·2
Apr. 3	8·2
7	7·2
30	7·6
May 2	8·3
20	8·3
24	8·0
Nov. 26	8·3
Dec. 15	8·7
17	9·6

α Persei S.P.	
Apr. 18	+49 17 7·7
May 2	6·9
20	8·5
25	9·5
26	9·7

α Persei by Reflection.	
Mar. 2	+49 17 8·1
3	8·2
4	8·9
5	7·9
6	7·7

η Tauri.	
	° ′ ″
Mar. 2	+23 36 18·3
4	18·1
14	17·3
Nov. 10	17·7
Dec. 15	17·5
17	18·1

γ¹ Eridani.	
Nov. 10	−13 58 5·1

37 Tauri.	
Nov. 10	+21 38 19·0

* R.A. $4^h\ 4^m\ 57^s$.	
Dec. 29	+25 50 53·1

α Tauri.	
Jan. 7	+16 10 52·9
Apr. 27	53·4
May 2	52·4
Aug. 20	52·7
Nov. 10	53·0
Dec. 15	53·9
28	53·3

α Aurigæ.	
Jan. 14	+45 49 38·9
21	37·2
Apr. 4	37·5
6	36·9
25	38·6
27	37·4
30	37·9
May 29	37·5
Dec. 28	36·6

α Aurigæ S.P.	
May 26	+45 49 38·0
28	35·8
29	36·9
30	36·4
June 28	37·3

α Aurigæ by Reflection.	
	° ′ ″
Jan. 7	+45 49 37·2
17	37·2
Dec. 9	35·6
14	38·1
15	37·6
17	36·2
24	37·9

β Orionis.	
Jan. 21	− 8 23 30·0
22	31·0
Apr. 4	30·1
6	30·9
Dec. 28	31·1

β Tauri.	
Jan. 15	+28 27 54·1
16	53·8
18	54·3
Apr. 4	54·4
27	53·7
May 2	54·1
29	54·7
Dec. 9	54·0
17	54·5

γ Orionis.	
Jan. 7	+ 6 11 54·1
Apr. 6	55·5
30	54·6

δ Orionis.	
Jan. 7	− 0 25 26·1

26 Aurigæ.	
Jan. 15	+30 23 25·1
16	24·2

A.S.C. 717.	
Jan. 16	+27 54 46·0

136 Tauri.	
Jan. 16	+27 34 2·1
Feb. 12	2·7
13	3·9
Dec. 9	2·0

α Orionis.	
	° ′ ″
Feb. 13	+ 7 22 16·0
Apr. 25	16·0
May 1	15·8
21	14·5

β Aurigæ.	
Jan. 18	+44 55 22·7

κ Aurigæ.	
Jan. 16	+29 32 59·9
17	33 0·2
Feb. 13	32 59·0

μ Geminorum.	
Jan. 18	+22 35 20·5
Feb. 13	20·4
24	19·3
Dec. 10	19·2

51 (Hev.) Cephei.	
Jan. 7	+87 15 45·8
14	45·4
15	45·9
17	45·5
21	46·0
22	45·2
25	45·6
27	46·1
29	45·4
Feb. 15	46·5
20	45·5
24	45·3
29	44·5

51 (Hev.) Cephei S.P.	
June 30	+87 15 44·8
July 9	44·9
13	45·4
15	44·6
16	45·7
29	44·8
Aug. 3	43·9
5	45·7
8	44·2
19	45·4
24	45·9
29	44·1
Sept. 10	44·6

ε Geminorum.

	° ′ ″
Jan. 17	+25 16 59·5
Dec. 10	58·3

α Canis Majoris.

Feb. 13	−16 30 9·6
24	5·9
May 1	7·8
20	6·3
21	5·4
Dec. 10	8·1

ζ Geminorum.

Dec. 10	+20 47 55·7

τ Geminorum.

Feb. 13	+30 30 2·7

δ Geminorum.

Jan. 18	+22 16 13·2
Feb. 3	14·2
13	14·3
20	15·0
Mar. 7	14·3
17	13·8
Dec. 10	14·6

∗ R.A. 7^h 17^m 42^s.

Feb. 3	+10 55 12·8
12	12·7
15	14·2

∗ R.A. 7^h 17^m 53^s.

Feb. 10	+11 19 19·5
13	20·1
20	21·8

α² Geminorum.

Feb. 3	+32 13 57·2
14	58·2
20	56·9
25	56·6
29	57·8
Mar. 7	57·8
11	57·6

α² Geminorum.

	° ′ ″
Mar. 12	+32 13 58·0
15	58·8
17	56·4
May 1	56·6
26	56·9
28	58·2

α Canis Minoris.

Feb. 3	+ 5 37 47·7
14	48·0
20	48·8
29	46·5
Mar. 11	47·7
12	47·2
13	47·3
15	47·5
May 20	47·8
26	48·7
28	48·2

β Geminorum.

Jan. 18	+28 24 22·5
Feb. 29	23·1
Mar. 11	22·7
12	23·6
13	22·8
15	22·6
May 26	23·4

φ Geminorum.

Mar. 12	+27 10 24·7
13	23·6

6 Cancri.

Feb. 15	+28 14 13·5

θ Cancri.

Jan. 19	+18 37 48·8
Feb. 14	49·1

δ Cancri.

Jan. 19	+18 44 16·2
Mar. 13	15·2
14	15·4

ε Hydræ.

	° ′ ″
Jan. 19	+ 7 0 3·1
Feb. 24	3·8
Mar. 4	4·6
13	4·3
18	4·2
19	3·9
20	4·0

ι Ursæ Majoris.

Jan. 19	+48 39 53·0
Feb. 14	51·7
Mar. 17	53·7
18	52·4
19	52·8
July 1	54·0
Oct. 6	53·6

ι Ursæ Majoris S.P.

July 28	+48 39 54·0
Aug. 21	51·6
22	52·6
28	51·9
29	53·3

ι Ursæ Majoris by Reflection.

Feb. 24	+48 39 52·8
25	52·7
26	52·9
29	53·8
Mar. 4	52·6

α Hydræ.

Mar. 4	− 7 58 6·4
19	7·0
20	5·6
31	6·8
Apr. 2	6·6
June 3	6·3
July 1	7·3
7	7·4
Oct. 18	6·4

θ Ursæ Majoris.

Feb. 22	+52 24 8·1
Mar. 11	7·7
13	7·8
17	7·2
18	7·5

θ Ursæ Majoris.

	° ′ ″
Mar. 24	+52 24 8·1
31	8·3
Apr. 2	7·7
June 2	7·1
July 1	8·3
Aug. 30	7·7
Oct. 18	6·7

θ Ursæ Majoris S.P.

Aug. 28	+52 24 10·2
29	6·6
31	8·2
Sept. 1	5·8
4	9·7

θ Ursæ Majoris by Reflection.

Feb. 24	+52 24 10·6
25	7·9
26	8·6
29	7·2
Mar. 5	8·1

ε Leonis.

Feb. 22	+24 30 27·1
Apr. 2	28·0
June 2	27·8
Oct. 18	28·0

α Leonis.

Feb. 22	+12 44 48·3

α Ursæ Majoris.

Mar. 24	+62 36 47·5
July 27	47·6
Aug. 3	47·3
21	48·7
24	47·1
26	47·0
31	47·5
Sept. 3	47·9
4	46·6
6	46·3
9	46·2
10	48·1
11	47·5
Nov. 16	46·9

α Ursæ Majoris S.P.

	° ′ °
Jan. 26	+62 36 46·8
27	45·8
31	46·7
Feb. 6	46·2
12	46·7
24	46·5

α Ursæ Majoris by Reflection.

Mar. 17	+62 36 47·1
18	47·3
19	47·2
Apr. 24	46·6
27	47·6
28	46·7

δ Leonis.

Mar. 24	+21 23 57·7
Sept. 20	57·4

δ Hydræ & Crateris.

Nov. 16	−13 54 48·3

σ Leonis.

Mar. 17	+ 6 54 18·2

υ Leonis.

Mar. 17	+ 0 3 31·9

β Leonis.

Apr. 24	+15 27 58·4
25	58·5
28	58·3
May 1	58·6
Nov. 18	59·5

γ Ursæ Majoris.

Apr. 24	+54 35 3·5
28	3·8
July 7	4·4
27	3·6
Aug. 3	3·1
6	3·4
11	3·4
31	3·8

γ Ursæ Majoris.	°	′	″
Sept. 10	+54	35	2·8
11			3·2
15			3·6
24			3·1
Nov. 16			4·0
17			4·1
18			3·2

γ Ursæ Majoris S.P.			
Jan. 6	+54	35	3·8
Mar. 5			5·1
Oct. 2			5·1
7			4·6
9			3·2

7 Virginis.			
Mar. 18	+ 4	32	46·8

η Virginis.			
Mar. 18	+ 0	13	22·6

ψ Virginis.			
Mar. 19	− 8	40	6·6

12 Canum Venaticorum.			
May 17	+39	11	2·0
23			1·1
26			1·2
June 1			2·3
2			1·7
3			1·3
Sept. 11			1·6
21			1·3

12 Canum Venat. S.P.			
Jan. 22	+39	10	58·1
Oct. 24			59·4
Nov. 7			49·9
18			60·7

12 Canum Venaticorum by Reflection.			
Apr. 25	+39	11	2·7
27			1·4
28			1·2
May 1			2·1
2			1·4

49 Virginis.	°	′	″
Mar. 19	− 9	52	59·4

α Virginis.			
May 25	−10	19	27·3
June 3			27·4
Dec. 17			27·1

ζ Ursæ Majoris.			
May 23	+55	45	45·2
Aug. 11			46·3
14			46·9
18			45·0
24			44·5
26			45·5
Sept. 3			44·9
4			45·5
15			46·3
19			44·9
21			46·2
23			44·9
Oct. 2			46·5
5			45·0
8			45·0
12			45·3
13			44·7
19			44·4
21			45·5

ζ Ursæ Majoris S.P.			
Jan. 29	+55	45	44·4
Feb. 7			45·8
10			46·1
Oct. 11			48·2
12			45·5
Dec. 11			46·6

η Ursæ Majoris.			
May 20	+50	6	50·2
25			50·0
Aug. 11			51·0
18			50·3
Sept. 3			51·2
12			50·2
15			50·8
23			50·3
24			50·2
Oct. 2			50·7
5			49·7
8			50·7

η Ursæ Majoris.	°	′	″
Oct. 9	+50	6	49·7
12			50·6
13			50·5
14			50·5
17			51·3
21			50·5
Dec. 17			49·1

η Ursæ Majoris S.P.			
Feb. 7	+50	6	49·7
Oct. 11			52·2
12			53·8
Nov. 2			50·9
7			51·5

η Ursæ Majoris by Reflection.			
Apr. 24	+50	6	50·7
27			50·0
28			50·5
May 1			51·1
2			50·2

η Bootis.			
Apr. 28	+19	12	7·7
June 1			8·2
July 7			8·5
Aug. 18			7·9
Oct. 12			8·1
13			8·0
17			7·6
21			6·4
Dec. 17			8·3

α Bootis.			
Apr. 20	+20	1	6·2
24			5·5
May 23			6·7
Sept. 7			6·1
12			6·4
19			6·2
Oct. 2			7·0
5			5·9
8			6·2
20			6·0
24			5·8

ε Bootis.	°	′	″
Jan. 26	+27	45	8·1
Apr. 18			5·0
20			7·0
22			9·0
Aug. 22			7·2
Sept. 7			8·0
19			8·4
24			8·2
Oct. 9			7·5

α² Libræ.			
Apr. 18	−15	22	20·5
22			22·6
May 29			21·3

β Ursæ Minoris.			
Apr. 18	+74	48	34·2
20			34·5
May 18			33·6
Aug. 22			33·1
Sept. 24			33·6
Oct. 9			33·1
20			33·8
24			34·4
Nov. 10			33·9
17			34·2

β Ursæ Minoris S.P.			
Feb. 24	+74	48	33·4
26			32·4
Mar. 5			32·8
6			33·1
18			32·9

β Ursæ Minoris by Reflection.			
May 20	+74	48	34·2
25			33·4
26			34·0
29			34·5
June 2			33·8

β Libræ.			
Apr. 18	− 8	47	16·1
May 18			15·4
July 9			16·2

α Coronæ Borealis.	°	′	″
May 18	+27	15	25·4
19			26·1
June 30			24·9
July 9			25·1
10			24·3
Oct. 14			25·7
30			25·1
Nov. 18			25·1
30			25·8

α Serpentis.			
June 30	+ 6	56	1·1
July 9			0·7
10			1·3
Sept. 23			0·0

ζ Ursæ Minoris.			
May 26	+78	16	59·3
28			60·0
29			59·2
June 28			60·3
30			60·6
July 7			60·4
Sept. 9			59·2

ζ Ursæ Minoris S.P.			
Mar. 2	+78	16	58·3
Nov. 10		17	0·2
Dec. 1			0·3
2			0·9
10		16	59·3

δ Ophiuchi.			
June 28	− 3	16	36·6
July 16			38·4

η Draconis.			
July 13	+61	52	40·7
16			40·7
17			40·7
20			40·0
Aug. 1			40·6
6			41·1
Oct. 3			39·5
Nov. 28			40·6
30			39·7

η Draconis S.P.

	° ′ ″
Jan. 17	+61 52 39·5
Nov. 10	39·2
Dec. 9	40·6
10	40·2
15	40·1

η Draconis by Reflection.

May 26	+61 52 39·8
28	41·7
29	40·7
June 28	39·8
30	40·3

⁎ R.A. 16h 40m 18s.

May 26	+ 3 1 43·0
28	40·7
29	41·9

ε Ursæ Minoris.

May 26	+82 17 22·6
28	22·3
30	22·4
June 3	22·4
28	21·3
July 13	23·7
25	23·5
29	22·4
Aug. 1	22·7
4	22·8
5	23·4
Sept. 25	22·1
Nov. 11	22·2
20	22·6
28	21·5
30	21·8
Dec. 2	22·2

ε Ursæ Minoris S.P.

Jan. 22	+82 17 21·4
27	21·9
29	21·9
Dec. 9	21·2
15	22·1

α Herculis.

May 30	+14 34 40·0
June 28	40·5
July 16	41·5

α Herculis.

	° ′ ″
July 17	+14 34 40·4
Aug. 4	40·5
Sept. 25	40·5
Nov. 28	40·2

β Draconis.

July 13	+52 25 21·2
15	20·5
25	20·1
Aug. 1	20·6
5	20·2
8	19·8
Sept. 29	20·8
Oct. 28	20·6
Nov. 24	21·0
Dec. 2	20·9
9	20·8
11	20·4
23	20·4

β Draconis S.P.

Jan. 18	+52 25 19·8
21	21·8
Dec. 9	21·4
24	21·2
28	20·8

β Draconis by Reflection.

June 28	+52 25 21·1
30	21·5
July 7	21·4
9	21·7
Aug. 4	21·7

α Ophiuchi.

Sept. 4	+12 40 54·1
29	53·7
Oct. 11	54·5
Nov. 11	53·6
12	53·7
20	54·0
30	54·2
Dec. 30	53·5

Piazzi XVII. 177.

June 28	+ 2 7 32·1
30	33·5
July 7	32·5

γ Draconis.

	° ′ ″
July 16	+51 30 37·6
24	38·5
25	36·8
29	38·1
Aug. 3	36·8
5	37·4
6	37·5
15	37·1
Sept. 10	36·7
Oct. 11	36·2
27	37·4
28	37·3
Nov. 12	37·3
24	36·5
27	37·2
30	37·0
Dec. 9	37·0
11	38·0
20	37·1
21	37·5
22	36·8
23	37·2
24	37·7

γ Draconis S.P.

Jan. 21	+51 30 38·5
25	37·9
Dec. 9	38·0
24	36·9
29	38·1

γ Draconis by Reflection.

June 28	+51 30 38·2
30	38·4
July 7	38·1
13	38·5
15	38·8

δ Ursæ Minoris.

June 30	+86 35 31·0
July 6	30·3
7	30·2
9	30·0
13	30·7
15	30·3
16	30·1
24	28·3
29	30·1
30	31·6
Aug. 1	29·7
6	29·3

δ Ursæ Minoris.

	° ′ ″
Aug. 19	+36 35 30·4
22	30·7
28	29·7
Sept. 10	30·3
Oct. 12	31·5
14	30·3
19	30·2
20	30·6
22	30·4
24	30·3
27	31·3
30	30·4
Nov. 3	30·8
11	30·4
12	30·2
18	30·5
19	30·6
24	30·3
28	30·2
30	30·2
Dec. 2	30·6
9	30·5
22	31·8
23	31·4
26	30·9
28	31·1

δ Ursæ Minoris S.P.

Jan. 7	+86 35 29·9
14	30·0
15	28·9
17	31·0
18	30·9
21	31·4
22	31·2
25	30·3
27	30·8
29	29·8
Feb. 13	29·3
15	29·9
20	32·3
24	30·5
29	30·3

α Lyræ.

July 6	+38 38 18·3
24	18·9
Aug. 4	19·2
19	19·2
Oct. 14	18·7
27	19·4
28	19·4

α Lyræ.

	° ′ ″
Oct. 30	+38 38 18·7
Nov. 3	18·8
12	19·1
18	19·8
24	19·7
Dec. 2	19·1
9	19·1
11	19·2
14	19·1
16	20·1
21	19·4
22	19·2
23	18·9
24	19·9
26	19·3
28	19·6
30	19·1
31	20·0

α Lyræ S.P.

Jan. 21	+38 38 6·5
22	19·3
27	23·3
29	10·9
Feb. 20	17·8
24	44·3

α Lyræ by Reflection.

July 1	+38 38 18·8
7	18·3
Aug. 22	19·0
24	20·0
28	20·6
29	19·6

β Lyræ.

July 6	+33 10 51·2
15	51·5
17	50·3
24	51·6
Aug. 22	52·5
24	52·3
26	51·7
28	51·4
29	51·5
Oct. 30	51·2
Dec. 26	51·3
29	51·9

ζ Aquilæ.	
	° ′ ″
July 15	+13 37 50·8
Aug. 28	50·6
29	49·8
Nov. 7	50·6
Dec. 1	49·8
29	50·3

* R.A. $19^h 7^m 3^s$.	
July 15	− 3 23 9·8
24	12·3
Aug. 5	11·6

δ Aquilæ.	
Aug. 28	+ 2 48 3·9
29	3·3
Sept. 4	4·2
7	3·3
9	4·0

γ Aquilæ.	
July 30	+10 13 41·8
Aug. 12	41·1
21	40·8
Nov. 7	41·7
20	41·1
Dec. 14	41·6
16	40·6

57 Sagittarii.	
Sept. 7	−19 26 45·6

α Aquilæ.	
Jan. 6	+ 8 27 2·0
July 29	1·8
30	2·3
Aug. 8	2·3
12	3·4
21	2·8
Nov. 7	3·0
Dec. 14	4·3
16	3·7
22	1·8
26	2·8
31	3·2

β Aquilæ.	
	° ′ ″
July 30	+ 6 0 42·5
Aug. 8	42·8
12	43·5
21	42·3

α² Capricorni.	
Sept. 9	−13 2 7·1

π Capricorni.	
July 15	−18 43 51·6
Sept. 7	51·1

λ Ursæ Minoris.	
July 15	+88 49 43·9
16	44·9
28	44·2
Aug. 12	44·3
20	44·9
21	44·5
22	42·6
24	44·4
28	45·4
29	43·7
31	44·4
Sept. 2	44·8
3	44·6
4	44·9
7	43·6
9	44·8
17	44·8
24	44·8
Nov. 7	45·9
16	44·7
21	44·8
30	44·6
Dec. 1	45·0

λ Ursæ Minoris S.P.	
Jan. 19	+88 49 43·8
Feb. 10	44·3
14	43·5
24	44·2
26	45·2
Mar. 5	44·3
6	44·1
7	45·1
9	44·1
11	44·9
14	43·8

λ Ursæ Minoris S.P.	
	° ′ ″
Mar. 17	+88 49 45·1
18	44·6
19	45·0
20	46·0

υ Capricorni.	
July 15	−18 41 47·7

α Cygni.	
Jan. 8	+44 42 41·6
16	41·8
28	40·2
Aug. 20	41·6
29	40·5
Sept. 17	40·6

α Cygni S.P.	
Feb. 10	+44 42 42·2
26	42·4
Mar. 4	49·1
6	40·4
7	41·5
17	43·2

α Cygni by Reflection.	
Aug. 12	+44 42 40·3
21	41·6
22	41·9
24	41·4
28	40·7

μ Aquarii.	
Aug. 12	− 9 34 44·4

61 Cygni preceding,	
Aug. 28	+37 57 59·2
29	58·5
31	58·6
Sept. 3	57·9
4	59 4
7	57·4

61 Cygni following.	
	° ′ ″
Aug. 28	+37 57 56·1
29	56·0
31	57·2
Sept. 3	56·1
4	56·9
7	56·1

ζ Cygni.	
Jan. 14	+29 34 25·8
16	26·2
Sept. 1	25·2
17	25·9
18	26·2
28	25·4
Nov. 27	26·2

29 Capricorni.	
July 16	−15 49 55·2

α Cephei.	
Jan. 14	+61 54 33·3
16	33·5
17	33·2
29	32·7
30	33·3
31	32·9
Feb. 9	33·8
10	34·3
July 28	34·5
Sept. 2	34·1
17	33·8
18	33·7
28	33·8
Nov. 27	34·2
Dec. 12	33·7

α Cephei S.P.	
Feb. 29	+61 54 33·2
Mar. 4	34·7
7	32·5
9	31·9
11	32·6

α Cephei by Reflection.	
Aug. 28	+61 54 34·9
29	35·1
31	33·9
Sept. 1	33·6
3	34·3

β Aquarii.	
	° ′ ″
Sept. 2	− 6 16 17·8
18	17·5

β Cephei.	
Jan. 14	+69 51 32·6
17	33·6
29	33·1
30	34·4
Feb. 6	33·0
9	32·9
10	33·1
Aug. 13	34·5
Sept. 2	34·1
28	33·9
Oct. 7	33·9

β Cephei S.P.	
Feb. 29	+69 51 33·7
Mar. 11	32·5
13	32·8
17	32·4
18	33·3

β Cephei by Reflection.	
Aug. 28	+69 51 33·1
29	33·8
31	33·4
Sept. 3	34·3
7	32·6

γ Capricorni.	
Sept. 9	−17 22 54·6

ε Pegasi.	
Jan. 6	+ 9 8 38·9
17	40·2
Sept. 1	39·1

α Aquarii.	
Aug. 13	− 1 5 40·9
Sept. 1	39·9

ι Aquarii.	
Aug. 13	−14 38 31·8

σ Aquarii.	° ′ ″
Sept. 9	−11 29 41·1

∗ R.A. $22^h 31^m 51^s$.	
Dec. 1	+51 31 43·5

ζ Pegasi.	
Jan. 2	+ 9 59 53·3
6	51·9
Oct. 7	52·7
23	52·7
24	51·1
27	51·8
Nov. 4	53·0
Dec. 23	53·1

∗ R.A. $22^h 33^m 47^s$.	
Dec. 1	+51 26 50·8
2	51·7

α Piscis Australis.	° ′ ″
Sept. 1	−30 28 6·7
4	6·1
9	27 50·5
Oct. 12	28 16·0
22	9·3
24	2·6
26	27 57·0
27	28 7·4
Dec. 1	10·2
2	5·3

3 Piscium.	
Sept. 10	− 0 40 18·6
Nov. 5	19·7

β Pegasi.	
Jan. 2	+27 12 58·1
11	58·8
26	57·5
Feb. 25	58·8
26	58·0
Mar. 4	58·3
5	57·6

β Pegasi.	° ′ ″
Oct. 7	+27 12 59·2
23	58·7
26	57·9
Nov. 4	59·0

α Pegasi.	
Jan. 15	+14 20 44·4
27	44·6
31	45·2
Feb. 12	45·1
Nov. 4	44·9
5	44·9

φ Aquarii.	
Sept. 10	− 6 54 37·7
11	37·7

γ Piscium.	
Nov. 4	+ 2 24 33·7
5	34·1

χ^1 Piscium.	° ′ ″
Oct. 9	+ 0 22 50·0

ι Piscium.	
Oct. 23	+ 4 45 34·5

γ Cephei.	
Jan. 11	+76 44 21·9
15	23·7
26	22·1
27	21·4
Feb. 10	22·0
26	21·3
27	22·5
Mar. 2	22·2
5	21·9
6	22·9
9	22·1
10	22·5
17	22·8
Nov. 5	23·7
14	23·6

γ Cephei S.P.	° ′ ″
Mar. 17	+76 44 21·6
19	21·9
Apr. 24	22·4
27	23·6
May 1	21·9

γ Cephei by Reflection.	
Jan. 6	+76 44 19·2
Oct. 2	22·8
7	21·9
9	21·9
12	20·9

λ Piscium.	
Oct. 9	+ 0 53 59·8

20 Piscium.	
Sept. 12	− 3 39 2·6
Nov. 5	3·1

ω Piscium.	
Sept. 12	+ 5 58 38·1
Nov. 5	38·6

ROYAL OBSERVATORY, EDINBURGH.

EXPLANATION

OF THE

PRECEDING MURAL CIRCLE OBSERVATIONS FOR 1840,

AND

ELEMENTS FOR THEIR REDUCTION.

EDINBURGH MURAL CIRCLE OBSERVATIONS FOR 1840.

Pages 79–114 contain the observations made with the Mural Circle, and the calculation of the Apparent Declinations.

The objects chiefly observed were the Sun, Moon, and Planets; the principal Stars, for ascertaining the adjustments and position of the Instrument; the Stars marked in the Nautical Almanac as proper to be observed with the Moon for determining its parallax; Zodiacal Stars contained in the Catalogue of the Royal Astronomical Society, and a few small Stars observed with Comets.

All these observations, with one or two exceptions only, were made by Professor HENDERSON.

The Telescope was moved round on the Circle 59° 59′ on January 1, 1840, and, being again fixed to the Circle, remained in this position during the year.

The observations have been read off with the two Horizontal Microscopes I. and II. A few observations of the Sun have been made by previously setting the Circle approximately to the position of one of the limbs, and reading off the two Microscopes, and afterwards making the line of collimation to coincide with the limb, and reading off Microscope I. In these cases, the previous indications of the Microscopes are entered in the columns, and the differences between the two readings of Microscope I. are subjoined in its column. These differences, applied to the mean of the two Microscopes, give the Mean Readings of the Circle for those observations.

To the mean of two Microscopes a correction is applied, given in the column titled Correction, which was taken from the following Table, constructed from the formula, investigated in the Introduction to vol. I., pp. viii, ix, for reducing angles, measured with two Microscopes, to the quantities which would have been obtained from six :—

CORRECTION TO REDUCE THE MEAN OF TWO MICROSCOPES TO THE MEAN OF SIX.

Readings of either Microscope.		Correction.	Readings of either Microscope.		Correction.	Readings of either Microscope.		Correction.
°	°	″	°	°	″	°	°	″
0	180	−0·55	60	240	+0·08	120	300	+0·48
5	185	−0·51	65	245	+0·08	125	305	+0·43
10	190	−0·45	70	250	+0·08	130	310	+0·37
15	195	−0·38	75	255	+0·10	135	315	+0·27
20	200	−0·28	80	260	+0·13	140	320	+0·15
25	205	−0·19	85	265	+0·17	145	325	+0·01
30	210	−0·11	90	270	+0·23	150	330	−0·12
35	215	−0·04	95	275	+0·29	155	335	−0·26
40	220	+0·02	100	280	+0·37	160	340	−0·38
45	225	+0·05	105	285	+0·42	165	345	−0·47
50	230	+0·07	110	290	+0·46	170	350	−0·53
55	235	+0·07	115	295	+0·48	175	355	−0·56

In reading off the observations, the cross wires of the Microscopes were made to bisect the sets of divisions immediately preceding the zero point of Microscope I., when this Microscope indicated a quantity less than 2′ 30″ to be added to the degrees and minutes of the preceding division; and the sets immediately following the same point, when the quantity indicated to be added was greater than 2′ 30″, except the observations distinguished by asterisks in the column of Object Observed, in which the reverse rule was followed. The mean values of the runs of the Microscopes for the different portions of the year are given in the following Table, being the means of values found from sets of readings made at the beginning and end of each period.

MEAN VALUE OF THE RUNS OF THE MICROSCOPES.

Period.		Mean value of runs.
Beginning.	Ending.	
1840.	1840.	″
Jan. 1	April 27	300·21
April 27	Dec. 11	300·04
Dec. 11	Dec. 31	299·39

To correct the mean of the readings of the Microscopes for the difference of the runs from 300″, let the mean quantity indicated, to be added to the degrees and minutes of the preceding divisions, be denoted by m when the divisions bisected preceded the zero point of Microscope I., and by m' when they followed this point, and let r denote the mean value of the runs taken from the above Table. Then the correct quantity to be added is

$$\frac{300'' \, m}{r}, \text{ or, } \frac{300'' \, (m' + r - 300'')}{r}.$$

The mean reading of the Circle is found by applying the correction for two Microscopes to the mean of the Microscopes corrected for runs. The degrees and minutes, given under Mean Reading of Circle, are those which were under Microscope I.

The observations were made at the transits of the objects over the meridian, or of their centres in the cases of the Sun, Moon, and Planets, unless otherwise mentioned in the Notes, where the necessary information is given for determining the horary angle, and thence the reduction to the meridian. The times of the observations are given by the Assistant-Clock placed beside the Circle, its rate being sufficiently uniform for reducing the observations. The corrections to be applied to this Clock to obtain the true sidereal time are given in the following Table:—

CORRECTIONS OF THE CIRCLE-CLOCK.

Date.	Time by Circle-Clock.	Correction.	Date.	Time by Circle-Clock.	Correction.	Date.	Time by Circle-Clock.	Correction.
1840.	h. m.	s.	1840.	h. m.	s.	1840.	h. m.	s.
Jan. 3	19 36	−40·7	Mar. 3	23 52	+21·4	May 23	6 27	−20·4
6	22 7	38·7	4	23 37	21·2	25	6 29	21·0
8	19 22	40·5	5	0 34	21·3	26	14 55	21·6
9	20 2	40·5	6	0 19	21·4	27	8 1	22·7
10	20 18	39·7	7	1 27	21·9	28	6 11	23·7
13	19 47	37·7	8	7 49	22·3	29	4 58	25·0
14	20 5	36·5	9	0 40	22·7	30	5 16	26·3
15	21 41	34·7	10	0 2	23·0			
16	20 30	32·4	11	0 0	22·8	June 1	5 0	29·0
17	20 51	30·6	12	23 48	22·4	2	9 31	29·5
18	21 21	30·0	13	0 18	21·7	3	5 26	30·3
20	20 30	28·5	14	0 35	20·9	4	9 18	32·3
21	20 44	27·4	16	0 26	19·8	8	5 48	41·4
22	22 20	26·0	17	1 5	18·9	9	6 4	42·5
23	20 46	24·9	18	2 33	17·8	10	5 49	44·3
24	20 30	23·6	19	2 43	16·9	11	6 1	45·3
25	0 58	21·5	20	0 18	16·3	12	6 21	46·9
27	21 21	19·2	21	3 38	14·1	13	6 6	47·9
28	21 52	18·3	23	1 39	8·8	15	6 11	52·7
29	21 31	17·5	24	0 36	5·9	16	6 31	54·5
30	21 18	16·6	25	0 52	+ 2·5	17	6 28	56·8
31	23 2	15·8	26	1 9	− 1·5	18	6 27	58·6
			27	1 0	5·3	19	6 33	60·5
Feb. 3	22 0	11·5	28	0 47	8·1	20	6 51	62·2
4	21 58	9·8	30	0 57	12·8	22	6 43	65·5
5	22 52	7·5	31	1 36	14·3	23	6 40	67·1
6	21 30	− 5·3				24	6 55	68·8
8	1 31	0·0	Apr. 1	1 1	15·5	25	6 49	70·6
10	23 40	+ 3·6	2	1 41	16·7	26	6 53	72·7
11	23 13	5·7	3	1 4	18·0	27	7 26	75·1
12	21 47	7·7	4	3 47	19·3	28	17 36	76·4
13	22 47	10·4	6	2 20	22·0	29	7 22	77·6
14	22 9	12·5	8	2 0	25·0	30	7 8 (a)	16·2
15	22 4	14·7	9	2 15	26·6			
17	22 17	20·3	20	5 18	27·5	July 1	7 16	16·6
18	22 42	22·9	24	2 20	27·1	2	7 34	17·5
19	22 47	25·3	27	2 42	33·7	3	11 13	17·9
20	23 8	26·7	28	2 29	36·5	4	8 20	17·7
21	23 20	27·1	29	2 54	39·9	6	7 56	18·6
22	23 33	27·2	30	2 38	42·6	7	9 16	18·9
24	23 19	25·9				8	8 41	19·3
25	23 52	25·5	May 1	2 42	46·4	9	7 51	20·1
26	23 38	25·5	2	3 11	50·5	10	9 17	20·9
27	23 1	24·1	16	6 59 (a)	18·3	11	7 59	21·7
28	23 26	23·2	18	4 37	18·0	13	8 10	24·2
29	23 19	22·6	19	6 16	18·2	14	7 45	25·6
			20	7 6	18·5	15	7 52	27·5
Mar. 2	23 48	21·7	21	6 21	19·1	16	8 17	29·1

(a) Clock put back one minute.

Date.	Time by Circle-Clock.	Correction.	Date.	Time by Circle-Clock.	Correction.	Date.	Time by Circle-Clock.	Correction.
1840.	h. m.	s.	1840.	h. m.	s.	1840.	h. m.	s.
July 17	7 58	−30·7	Sept. 11	11 36	−51·3	Nov. 10	16 18	−47·1
18	8 54	31·9	12	13 35	54·2	12	15 22	47·3
20	16 59	33·8	15	12 5	62·2	13	16 34	47·3
21	8 20	34·3	16	13 20 (a)	5·8	14	17 20	46·9
22	9 59	34·9	17	12 3	9·3	16	20 13	47·8
23	8 26	35·5	18	12 14	11·9	17	16 4	48·0
24	11 17	35·7	19	13 21	14·8	18	15 57	49·8
25	8 36	36·0	21	12 33	20·5	19	16 13	52·0
27	9 8	35·3	22	14 0	23·8	20	16 49	55·1
28	8 58	35·1	23	12 51	27·1	22	18 52	58·6
29	9 6	35·9	24	12 37	30·5	23	17 45	60·1
30	9 13	37·1	28	15 9	37·0	24	17 12	59·9
31	9 17	38·5	30	12 53	38·9	25	16 40	59·6
						26	1 30	58·5
Aug. 1	9 24	40·4	Oct. 1	13 9	39·7	27	17 3	58·7
3	9 33	44·0	2	14 18	41·0	28	17 0	58·9
4	11 10	45·8	3	13 21	−42·7	30	16 44	59·0
5	9 34	46·2	7	16 25 (b)	+ 9·8			
6	9 33	46·7	8	13 21	6·5	Dec. 1	19 31	58·3
7	9 40	47·1	9	13 11	3·8	2	17 17	58·1
8	9 47	46·9	10	14 48	+ 1·6	3	17 16	58·4
9	11 1	46·9	11	0 29	− 1·3	4	17 0	58·8
10	10 59	47·4	12	13 30	2·4	5	17 40	59·0
11	9 42	48·1	13	14 16	4·5	7	17 40	58·3
13	9 44	51·1	14	14 5	6·3	8	17 22	58·2
14	9 54	53·0	15	13 57	8·7	9	18 1	57·8
17	18 8	67·3	16	15 2	10·9	10	18 0	58·5
18	10 5 (a)	10·6	17	14 4	11·8	11	18 9	58·2
19	11 12	15·3	19	15 23	13·6	12	18 28	58·8
20	11 14	19·1	20	14 5	15·3	14	18 13	61·9
21	11 26	20·5	21	15 12	17·6	15	20 21 (a)	4·6
23	13 54	21·9	22	14 35	19·6	16	18 25	8·0
24	10 53	23·1	23	14 16	22·2	17	19 45	11·9
26	10 35	26·4	24	15 16	24·7	18	19 50	14·3
27	10 46	28·9	26	14 17	31·2	19	18 22	16·4
28	10 43	30·7	27	14 20	34·7	21	18 29	18·6
30	13 22	31·8	28	14 20	38·1	22	18 39	20·2
31	11 1	33·0	30	14 46	43·2	23	18 49	21·7
			31	14 48	44·4	24	18 47	23·7
Sept. 1	11 3	34·2				25	19 13	25·3
2	11 16	35·5	Nov. 2	15 6	45·7	26	19 15	26·8
3	11 6	36·2	4	15 31	45·9	28	20 14	28·4
5	11 15	40·6	5	16 13	46·2	29	18 42	30·1
7	11 56	44·5	6	15 7	46·3	30	19 49	31·2
8	11 45	46·9	7	16 5	46·4	31	19 35	31·6
9	11 29	48·6	9	15 51	46·8			

(*a*) Clock put back one minute.
(*b*) Clock not wound up.

Transits of Stars over Wire III. were frequently observed, for the purpose of ascertaining its deviation from the meridian; and it appeared, from Stars taken promiscuously, in the months of January, June, and December, that Wire III. was west of the meridian by the following quantities :—

Declination.	Deviation.	Deviation reduced to a Great Circle.
	In January,	
° ′	s.	s.
+ 8 27	1·6 −	1·6 −
+14 18	·3 −	·3 −
+28 24	·4 +	·4 +
+61 55	·5 −	·2 −
+87 16	3·5 −	·2 −
+88 27	7·2 +	·2 +
+86 35 S.P.	3·3 +	·2 +
+51 31 S.P.	1·3 −	·8 −
+38 38 S.P.	2·1 −	1·6 −
	In June,	
− 7 58	1·3 −	1·3 −
+24 30	·3 −	·3 −
+39 11	·7 −	·5 −
S.P. +88 27	9·7 −	·3 −
S.P. +45 50	1·5 −	1·0 −
	In December,	
−10 19	·7 −	·7 −
+22 35	·4 −	·4 −
+38 38	·2 +	·2 +
+52 25	·2 +	·1 +
+61 55	·3 +	·2 +
+86 35	7·7 −	·5 −
S.P. +78 17	1·4 −	·3 −

The deviation appearing so very small, no account has been taken of it in the computations.

The reduction to the meridian for Stars is composed of two terms. The first, depending on the deviation of the Stars parallel from a great circle, is computed from the formula,

$$\frac{225''}{4} \sin 1'' \sin 2\,D \times t^2,$$

D denoting the Declination of the object, and t its horary angle, expressed in seconds of time, and $\sin 2\,D$ being negative for objects south of the Equator or below the Pole. The second, depending on a small inclination of the horizontal wire of the Circle, is computed from the formula,

$$0''\cdot0080 \cos D \times t,$$

and is positive before transit above the Pole. The coefficient was deduced from a comparison of the observations of *a Ursæ Minoris*, made during the year, at various distances from Wire III.

The reduction for the Sun, Moon, and Planets, has also a third term, being the change of declination during the interval between the time of observation and the meridian transit, positive when the body is moving to the north, and the time of observation after the transit, or when the body is moving to the south, and the time of observation is before the transit, and negative in other cases.

The Refractions are computed by BESSEL'S Tables. For convenience in practice, up to 78° of zenith distance, Mr SHEEPSHANKS' compendious form of BESSEL'S Refractions has been used, and so far the exterior thermometer only has been employed in the computation; but, for zenith distances above 78°, the original tables in the *Tabulæ Regiomontanæ* have been referred to.

To the mean reading of the Circle, the reduction to the meridian and refraction are applied, according to their signs, and the result is the reduced reading of the Circle, or the reading for the meridian observations, clear of the effect of refraction. The reduced readings are converted into Declinations by the following process.

The subjoined Catalogue of Mean Declinations was taken from the Greenwich Observations for 1840.

STAR.	Mean Declination in 1840·0.			Number of Observations.	Difference from Nautical Almanac.
	°	′	″		″
α Andromedæ	+28	12	24·9	17	−2·2
γ Pegasi	+14	17	37·8	8	−1·0
α Cassiopeæ	+55	39	32·3	40	+0·3
β Ceti	−18	51	59·1	6	−4·4
α Ursæ Minoris	+88	27	22·1	77	+0·2
θ¹ Ceti	− 9	0	40·3	4	−4·4
α Arietis	+22	42	9·1	24	−0·3
γ Ceti	+ 2	33	28·4	7	+1·0
α Ceti	+ 3	27	28·7	8	+0·8
α Persei	+49	17	7·1	6	+0·4
η Tauri	+23	36	18·1	6	−1·2
γ¹ Eridani	−13	58	4·8	4	−1·7
α Tauri	+16	10	53·1	16	−0·9
α Aurigæ	+45	49	37·6	32	−1·0
β Orionis	− 8	23	31·4	1	−2·1
β Tauri	+28	27	54·5	20	−0·2
δ Orionis	− 0	25	24·5	14	−1·3
α Leporis	−17	56	30·7	13	+0·9
ε Orionis	− 1	18	35·6	9	−1·4
α Orionis	+ 7	22	15·4	17	−1·7

STAR.	Mean Declination in 1840·0.			Number of Observations.	Difference from Nautical Almanac.
	°	′	″		″
μ Geminorum	+22	35	19·0	1	−3·4
51 Cephei	+87	15	45·1	29	+2·6
α Canis Majoris	−16	30	6·2	17	+1·3
ε Canis Majoris	−28	45	33·0	11	−1·0
δ Geminorum	+22	16	13·6	11	+0·4
α^2 Geminorum	+32	13	56·5	9	+0·6
α Canis Minoris	+5	37	48·9	6	+2·1
β Geminorum	+28	24	23·4	10	+0·4
15 Argus	−23	50	51·1	3	−3·0
ε Hydræ	+7	0	4·3	5	−2·3
ι Ursæ Majoris	+48	39	53·6	11	+1·4
α Hydræ	−7	58	6·7	13	−1·8
θ Ursæ Majoris	+52	24	8·4	13	+0·8
ε Leonis	+24	30	27·4	20	−1·1
α Leonis	+12	44	47·6	16	+1·3
α Ursæ Majoris	+62	36	47·2	32	−0·3
δ Leonis	+21	23	57·6	15	−2·7
δ Hydræ & Crateris	−13	54	48·3	4	−0·1
β Leonis	+15	27	58·5	12	+0·3
γ Ursæ Majoris	+54	35	3·9	18	+0·7
12^2 Canum Venaticorum	+39	11	1·5	5	−0·7
α Virginis	−10	19	27·1	5	−0·7
η Ursæ Majoris	+50	6	50·3	6	0·0
η Bootis	+19	12	8·0	8	−5·3
α Bootis	+20	1	6·0	53	+0·9
ϵ^2 Bootis	+27	45	7·3	16	−1·4
α^2 Libræ	−15	22	22·3	13	−4·1
β Ursæ Minoris	+74	48	34·3	56	+1·0
β Libræ	−8	47	16·7	14	−1·5
α Coronæ Borealis	+27	15	25·5	24	+0·1
α Serpentis	+6	56	0·2	15	−2·6
ζ Ursæ Minoris	+78	17	0·1	23	0·0
β^1 Scorpii	−19	21	41·9	2	−3·1
δ Ophiuchi	−3	16	37·0	6	−3·2
α Scorpii	−26	4	14·0	6	−0·9
η Draconis	+61	52	40·5	19	+0·9
ε Ursæ Minoris	+82	17	22·2	24	−0·2
α^1 Herculis	+14	34	40·1	14	−1·3
β Draconis	+52	25	20·8	8	0·0
α Ophiuchi	+12	40	53·6	20	−5·1
γ Draconis	+51	30	37·5	9	+0·4
μ^1 Sagittarii	−21	5	38·7	12	−5·1
δ Ursæ Minoris	+86	35	30·2	9	+1·4
α Lyræ	+38	38	19·0	72	+1·7
β Lyræ	+33	10	50·5	11	−1·9
ζ Aquilæ	+13	37	50·3	12	−2·9
δ Aquilæ	+2	48	3·4	14	−1·7

STAR.	Mean Declination in 1840·0.			Number of Observations.	Difference from Nautical Almanac.
	°	′			″
γ Aquilæ	+10	13	42·4	3	−0·5
α Aquilæ	+ 8	27	2·9	31	+2·7
β Aquilæ	+ 6	0	43·7	5	−0·7
α^2 Capricorni	−13	2	8·2	6	−2·6
λ Ursæ Minoris	+88	49	44·6	11	+0·2
α Cygni	+44	42	41·4	51	+1·5
ζ Cygni	+29	34	25·7	13	−1·8
α Cephei	+61	54	33·6	25	+0·6
β Aquarii	− 6	16	16·9	9	−1·2
β Cephei	+69	51	33·9	30	+0·7
ε Pegasi	+ 9	8	40·7	18	−1·1
α Aquarii	− 1	5	39·5	11	−1·5
ζ Pegasi	+ 9	59	53·3	5	−0·6
α Piscis Australis	−30	28	7·1	8	−2·2
α Pegasi	+14	20	45·1	18	−1·8
ι Piscium	+ 4	45	35·0	13	+0·1
γ Cephei	+76	44	23·2	28	+1·4

The apparent declinations of these standard Stars are obtained by applying the corrections of the Nautical Almanac, and, being added to the reduced readings, give the positions of the Equatorial point observed, the seconds of which only, for the saving of space, appear in the column bearing that title, the degrees and minutes, 356° 2′, being constant during the year, after the Telescope was moved upon the Limb of the Circle on January 1. A mean of the several values obtained during a certain interval, generally twenty-four hours, during which it is supposed that the position of this point remained without sensible change, is the Equatorial point adopted during the interval. The beginning and end of the intervals are indicated by horizontal lines in the columns of the Equatorial Point Observed; and the seconds of the Equatorial Point Adopted are given in the column having that title; at the beginning of each interval, and at the top of each page, the degrees and minutes, 356° 2′, having to be supplied.

A few isolated reflection observations having been made in the course of the year, equatorial points have been obtained from them, on the supposition of the Latitude being +55° 57′ 23·2″, and been used as though the observations had been direct.

In the last month of the year a collimating eyepiece was begun to be used, and each complete observation with this has been treated as if it had been a star observed by reflection.

Some observations of standard Stars were made very near the horizon, as α Piscis Australis to the south, and α Lyræ S.P., with others to the north; but they have not been employed in obtaining the Equatorial point, as the measures from day to day exhibited large discrepancies, not explainable by any change of refraction depending on the height of the Barometer or Thermometer.

The apparent Declination observed, given in the last column, is the difference between the reduced reading and the position of the Equatorial point adopted. In the case of the Sun, Moon, and Planets, the parallax in declination and the semi-diameter (when a limb has been observed) have still to be applied, in order to obtain the geocentric Declination of the centre.

The apparent Declinations of the Stars are converted into mean Declinations for the beginning of 1840, by applying the corrections for precession, nutation, aberration, and proper motion, taken from the elements and subsidiary Tables given in the Nautical Almanac and Astronomical Society's Catalogue. The individual results are given at pp. 115–122.

ROYAL OBSERVATORY, EDINBURGH.

CATALOGUE

OF THE

MEAN RIGHT ASCENSIONS AND DECLINATIONS OF THE STARS OBSERVED, FOR JANUARY 1, 1840,

AND

REDUCED OBSERVATIONS OF THE SUN, MOON, AND PLANETS.

1840.

CATALOGUE OF THE MEAN RIGHT ASCENSIONS AND DECLINATIONS OF THE STARS OBSERVED, REDUCED TO JANUARY 1, 1840.

No. of Astronom. Society's Catalogue.	STAR.	Mean Right Ascension.	Mean Declination.	No. of Observations.	
				Right Ascension.	Declination.
		h. m. s.	° ′ ″		
2881	α Andromedæ	0 0 7·75	+ 28 12 24·8	23	12
…	✱	0 1 47·54	+ 49 54 59·4	3	3
13	γ Pegasi	0 5 0·16	+ 14 17 37·3	18	7
16	35 Piscium	0 6 44·38	+ 7 55 55·3	1	1
60	α Cassiopeæ	…………	+ 55 39 31·2	…	13
…	S.P.	…………	31·7	…	5
67	β Ceti	0 35 33·32	− 18 51 57·2	8	2
74	58 Piscium	0 38 40·92	…………	2	…
81	δ Piscium	0 40 23·31	+ 6 42 48·4	2	1
103	ε Piscium	0 54 38·56	+ 7 1 38·0	3	2
…	✱	0 55 38·00	+ 39 7 55·3	3	3
…	✱	0 59 1·01	+ 38 23 47·0	3	3
…	✱	1 0 34·70	+ 38 55 39·1	3	3
115	α Ursæ Minoris	1 2 11·16	+ 88 27 22·3	65	52
…	S.P.	11·18	22·1	47	52
…	✱	1 4 8·29	+ 38 13 14·4	3	3
…	✱	1 6 22·75	+ 37 38 17·7	3	3
…	✱	1 7 53·38	+ 37 36 52·2	3	3
…	✱	1 8 31·69	+ 37 23 29·5	3	3
149	θ^1 Ceti	1 16 1·59	− 9 0 40·6	13	2
…	✱	1 16 4·63	+ 34 53 49·9	3	3
…	✱	1 16 19·32	+ 35 7 43·6	4	3
166	η Piscium	1 22 55·89	+ 14 31 8·8	3	2
…	✱	1 27 37·27	+ 31 54	2	…
…	✱	1 27 43·65	+ 32 2 4·4	3	3
178	π Piscium	1 28 37·47	…………	1	…
…	✱	1 29 55·49	+ 31 17 38·5	3	3
…	✱	1 32 52·77	+ 31 14 41·8	3	3
…	✱	1 33 9·06	+ 30 19 41·8	3	3
…	✱	1 36 59·11	+ 28 21 34·0	3	3
201	β Arietis	1 45 48·77	+ 20 1 24·3	3	2
227	α Arietis	1 58 10·03	+ 22 42 9·5	35	4
239	θ^1 Arietis	2 9 14·10	+ 19 9 28·2	3	2
259	ψ Arietis	2 22 2·48	+ 16 59 32·7	3	2
276	ν Arietis	2 29 44·51	…………	1	…
289	γ Ceti	2 35 0·92	…………	17	…
319	ε Arietis	2 50 4·51	…………	1	…
332	α Ceti	2 53 55·28	+ 3 27 28·5	18	1
…	✱	3 4 58·99	+ 22 21 4·1	3	3
365	α Persei	…………	+ 49 17 8·3	…	10
…	S.P.	…………	8·5	…	5
…	Reflection	…………	8·2	…	5
414	η Tauri	3 37 59·06	+ 23 36 17·8	21	6
440	γ^1 Eridani	3 50 34·06	− 13 58 5·1	9	1
448	37 Tauri	3 55 14·68	+ 21 38 19·0	2	1
…	✱	4 4 48·35	+ 25 50 53·1	2	1
502	υ^1 Tauri	4 16 44·52	…………	2	…

No. of Astronom. Society's Catalogue.	STAR.	Mean Right Ascension.	Mean Declination.	No. of Observations.	
				Right Ascension.	Declination.
		h. m. s.	° ′ ″		
528	α Tauri	4 26 44·74	+ 16 10 53·1	30	7
543	τ Tauri	4 32 38·95	....	1	...
570	ι Aurigæ	4 46 35·17	....	1	...
585	ι Tauri	4 53 32·52	....	1	...
611	α Aurigæ	5 4 52·73	+ 45 49 37·6	42	9
...	............S.P.	....	36·9	...	5
...	............Reflection	....	37·1	...	7
619	β Orionis	5 6 51·01	− 8 23 30·6	29	5
642	β Tauri	5 16 10·91	+ 28 27 54·2	29	9
648	γ Orionis	....	+ 6 11 54·7	...	3
665	δ Orionis	5 23 50·10	− 0 25 26·1	10	1
686	ε Orionis	5 28 5·79	....	1	...
687	26 Aurigæ	5 28 21·88	+ 30 23 24·6	2	2
717	Tauri	....	+ 27 54 46·0	...	1
722	136 Tauri	5 43 16·30	+ 27 34 2·7	3	4
734	α Orionis	5 46 30·64	+ 7 22 15·6	10	4
735	β Aurigæ	....	+ 44 55 22·7	...	1
774	ϰ Aurigæ	6 5 10·90	+ 29 32 59·7	4	3
790	μ Geminorum	6 13 16·80	+ 22 35 19·8	10	4
...	51 (Hev.) Cephei	....	+ 87 15 45·6	...	13
...	.... S.P.	....	44·9	...	13
831	ε Geminorum	6 34 5·06	+ 25 16 58·9	4	2
838	α Canis Majoris	6 38 5·91	− 16 30 7·2	25	6
872	ζ Geminorum	6 54 36·81	+ 20 47 55·7	1	1
881	τ Geminorum	7 0 56·86	+ 30 30 2·7	2	1
900	δ Geminorum	7 10 33·66	+ 22 16 14·2	12	7
...	*	7 17 38·44	+ 10 55 13·2	4	3
...	*	7 17 50·00	+ 11 19 20·5	4	3
927	α Geminorum preceding	7 24 22·45	....	4	...
...	.... following	7 24 22·85	+ 32 13 57·5	22	13
941	α Canis Minoris	7 30 55·26	+ 5 37 47·8	23	11
948	β Geminorum	7 35 30·94	+ 28 24 23·0	18	7
963	φ Geminorum	7 43 41·68	+ 27 10 24·2	2	2
984	6 Cancri	....	+ 28 14 13·5	...	1
1035	θ Cancri	8 22 27·84	+ 18 37 49·0	3	2
1037	η Cancri	8 23 26·56	....	1	...
1066	δ Cancri	8 35 35·00	+ 18 44 15·6	6	3
1073	ε Hydræ	8 38 17·84	+ 7 0 3·7	7	7
1092	ι Ursæ Majoris	....	+ 48 39 53·0	...	7
......	.... S.P.	....	52·7	...	5
......	.... Reflection	....	53·0	...	5
1147	α Hydræ	9 19 43·44	− 7 58 6·6	6	9
1152	θ Ursæ Majoris	....	+ 52 24 7·7	...	12
......	.... S.P.	....	8·1	...	5
......	.... Reflection	....	8·5	...	5
1153	λ Leonis	9 22 34·80	....	1	...
1171	ο Leonis	9 32 36·14	....	1	...
1175	ε Leonis	9 36 45·40	+ 24 30 27·7	6	4
1209	α Leonis	9 59 50·58	+ 12 44 48·3	11	1
1254	ϱ Leonis	10 24 22·84	....	1	...
1270	34 Sextantis	10 34 21·55	....	1	...

No. of Astronom. Society's Catalogue.	STAR.	Mean Right Ascension.	Mean Declination.	No. of Observations.	
				Right Ascension.	Declination.
		h. m. s.	° ′ ″		
1305	α Ursæ Majoris	......	+ 62 36 47·3	...	14
......	S.P.	......	46·4	...	6
......	Reflection	......	47·1	...	6
1310	χ Leonis	10 56 45·62	......	2	...
1321	69 Leonis	11 5 34·13	......	1	...
1320	δ Leonis	11 5 35·41	+ 21 23 57·6	8	2
1328	75 Leonis	11 9 3·36	......	1	...
1333	δ Hydræ & Crateris	11 11 20·74	− 13 54 48·3	3	1
1334	σ Leonis	11 12 52·96	+ 6 54 18·2	2	1
1362	υ Leonis	11 28 45·43	+ 0 3 31·9	5	1
1375	β Leonis	11 40 53·59	+ 15 27 58·7	12	5
1376	β Virginis	11 42 21·58	......	2	...
1379	γ Ursæ Majoris	......	+ 54 35 3·5	...	15
......	S.P.	......	4·4	...	5
1385	7 Virginis	11 51 45·18	+ 4 32 46·8	2	1
1415	η Virginis	12 11 43·33	+ 0 13 22·6	3	1
1446	21 Virginis	12 25 31·64	......	1	...
1465	γ Virginis	12 33 33·27	......	3	...
1488	ψ Virginis	12 46 2·28	− 8 40 6·6	1	1
1492	12 Canum Venat.	12 48 31·98	+ 39 11 1·6	32	8
......	S.P.	......	10 57·0	...	4
......	Reflection	......	11 1·8	...	5
1506	49 Virginis	12 59 31·29	− 9 52 59·4	1	1
1514	53 Virginis	13 3 33·14	......	2	...
1533	α Virginis	13 16 46·28	− 10 19 27·3	15	3
1534	ζ Ursæ Majoris	......	+ 55 45 45·4	...	19
......	S.P.	......	46·1	...	6
1574	89 Virginis	13 41 11·39	......	2	...
1575	η Ursæ Majoris	......	+ 50 6 50·4	...	19
......	S.P.	......	51·6	...	5
......	Reflection	......	50·5	...	5
1587	η Bootis	13 47 3·94	+ 19 12 7·8	26	9
1620	α Bootis	14 8 21·90	+ 20 1 6·2	49	11
1624	λ Virginis	14 10 27·67	......	4	...
1672	ε Bootis	14 37 59·96	+ 27 45 7·6	33	9
1681	α^2 Libræ	14 42 2·26	− 15 22 21·5	12	3
1700	β Ursæ Minoris	......	+ 74 48 33·8	...	10
......	S.P.	......	32·9	...	5
......	S.P.	......	33·8	...	5
1705	20 Libræ	14 54 43·19	......	2	...
1732	β Libræ	15 8 24·33	− 8 47 15·9	1	3
1770	α Coronæ Borealis	15 27 54 90	+ 27 15 25·3	30	9
1791	α Serpentis	15 36 23·44	+ 6 56 0·8	16	4
1800	1 Scorpii	15 41 22·20	......	1	...
1824	ζ Ursæ Minoris	......	+ 78 16 59·9	...	7
......	S.P.	......	59·8	...	5
1823	δ Scorpii	15 50 53·05	......	1	...
1836	β^1 Scorpii	15 56 8·52	......	3	...
1859	δ Ophiuchi	16 5 57·95	− 3 16 37·5	7	2
1872	σ Scorpii	16 11 28·44	......	2	...
1885	α Scorpii	16 19 36·38	......	6	...

No. of Astronom. Society's Catalogue.	Star.	Mean Right Ascension.	Mean Declination.	No. of Observations.	
				Right Ascension.	Declination.
		h. m. s.	° ′ ″		
1892	η Draconis	....	+ 61 52 40·4	...	9
......	S.P.	....	39·9	...	5
......	Reflection	....	40·5	...	5
......	*	16 40 18·15	+ 3 1 41·9	3	3
1964	ε Ursæ Minoris	....	+ 82 17 22·5	...	17
......	S.P.	....	21·7	...	5
1967	36 Ophiuchi	17 5 31·21	....	1	...
1970	α Herculis	17 7 21·21	+ 14 34 40·5	30	7
1986	θ Ophiuchi	17 12 11·38	....	1	...
2016	β Draconis	....	+ 52 25 20·6	...	13
......	S.P.	....	21·0	...	5
......	Reflection	....	21·5	...	5
2017	α Ophiuchi	17 27 30·51	+ 12 40 53·9	30	8
......	*	17 31 0·19	+ 2 9	2	...
......	Piazzi XVII. 177	17 31 3·65	+ 2 7 32·7	1	3
2071	γ Draconis	....	+ 51 30 37·2	...	23
......	S.P.	....	37·9	...	5
......	Reflection	....	38·4	...	5
2079	γ^2 Sagittarii	17 55 31·80	....	1	...
2122	λ Sagittarii	18 18 5·60	....	3	...
2148	δ Ursæ Minoris	18 23 55·88	+ 86 35 30·5	55	38
......	S.P.	55·89	30·4	37	15
2156	α Lyræ	18 31 31·28	+ 38 38 19·3	31	25
......	S.P.	....	20·4	...	6
......	Reflection	....	19·4	...	6
2163	φ Sagittarii	18 35 39·38	....	1	...
2177	β Lyræ	18 44 10·42	+ 33 10 51·5	60	12
2214	ζ Aquilæ	18 58 3·37	+ 13 37 50·3	28	6
2220	π Sagittarii	19 0 14·75	....	1	...
......	*	19 7 3·59	− 3 23 11·2	5	3
2266	δ Aquilæ	19 17 25·81	+ 2 48 3·7	18	5
2290	52 Sagittarii	19 26 57·78	....	2	...
2317	γ Aquilæ	19 38 39·13	+ 10 13 41·2	36	7
2328	57 Sagittarii	19 42 53·77	− 19 26 45·6	1	1
2329	α Aquilæ	19 42 58·53	+ 8 27 2·8	36	12
2340	β Aquilæ	19 47 27·18	+ 6 0 42·8	16	4
2388	α^2 Capricorni	20 9 10·35	− 13 2 7·1	7	1
2397	β^2 Capricorni	20 12 0·92	....	2	...
2403	π Capricorni	20 18 9·28	− 18 43 51·4	2	2
......	λ Ursæ Minoris	....	+ 88 49 44·5	...	23
......	S.P.	....	44·5	...	15
2432	υ Capricorni	20 30 56·22	− 18 41 47·7	2	1
2444	α Cygni	20 35 58·76	+ 44 42 41·0	40	6
......	S.P.	....	43·1	...	6
......	Reflection	....	41·2	...	5
2470	μ Aquarii	20 44 1·09	− 9 34 44·4	2	1
2501	θ Capricorni	20 56 56·73	....	1	...
2506	χ^1 Capricorni	20 59 23·26	....	1	...
......	61 Cygni preceding	20 59 43·82	+ 37 57 58·5	11	6
......	following	20 59 45·21	+ 37 57 56·4	11	6
2512	ζ Cygni	21 6 7·69	+ 29 34 25·8	28	7
2516	29 Capricorni	21 6 53·11	− 15 49 55·2	1	1

No. of Astronom. Society's Catalogue.	STAR.	Mean Right Ascension.	Mean Declination.	No. of Observations.	
				Right Ascension.	Declination.
		h. m. s.	° ′ ″		
2528	ι Capricorni	21 13 19·60	...	1	...
2536	α Cephei	...	+ 61 54 33·7	...	15
......	S.P.	...	33·0	...	5
......	Reflection	...	34·4	...	5
2551	β Aquarii	21 23 7·85	− 6 16 17·6	13	2
2559	β Cephei	...	+ 69 51 33·6	...	11
......	S.P.	...	32·9	...	5
......	Reflection	...	33·4	...	5
2560	ε Capricorni	21 28 6·72	...	1	...
2566	γ Capricorni	21 31 13·10	− 17 22 54·6	2	1
2578	ε Pegasi	21 36 19·61	+ 9 8 39·4	17	3
2586	δ Capricorni	21 38 12·22	...	3	...
2600	μ Capricorni	21 44 33·92	...	2	...
2614	30 Aquarii	21 54 51·22	...	2	...
2619	α Aquarii	21 57 33·83	− 1 5 40·4	17	2
2622	ι Aquarii	21 57 47·30	− 14 38 31·8	2	1
2655	θ Aquarii	22 8 23·21	...	2	...
2688	σ Aquarii	22 22 10·47	− 11 29 41·1	3	1
2698	η Aquarii	22 27 7·99	...	2	...
2701	κ Aquarii	22 29 27·97	...	3	...
......	*	22 31 51·	+ 51 31 43·5	...	1
2710	ζ Pegasi	22 33 29·01	+ 9 59 52·4	20	8
......	*	22 33 47·	+ 51 26 51·2	...	2
2730	λ Aquarii	22 44 15·69	...	3	...
2741	α Piscis Australis	...	− 30 28 5·1	...	10
2746	3 Piscium	22 52 25·56	− 0 40 19·2	1	2
2753	β Pegasi	...	+ 27 12 58·4	...	11
2755	α Pegasi	22 56 47·64	+ 14 20 44·9	31	6
2772	φ Aquarii	23 6 1·85	− 6 54 37·7	3	2
2777	γ Piscium	23 8 52·35	+ 2 24 33·9	3	2
2798	κ^1 Piscium	23 18 43·68	+ 0 22 50·0	4	1
2823	ι Piscium	23 31 43·40	+ 4 45 34·5	13	1
2826	γ Cephei	...	+ 76 44 22·4	...	15
......	S.P.	...	22·3	...	5
......	Reflection	...	21·3	...	5
2829	λ Piscium	23 33 52·87	+ 0 53 59·8	3	1
2841	20 Piscium	23 39 42·97	− 3 39 2·8	3	2
2865	ω Piscium	23 51 5·75	+ 5 58 38·4	3	2

OBSERVED SIDEREAL TIME OF THE SUN'S DIAMETER PASSING THE MERIDIAN.

Date.	Observed Time.	Difference from Nautical Almanac.
1840.	m. s.	s.
January 6	2 21·30	− 0·20
11	20·90	+ 0·10
16	19·82	− 0·12
17	19·52	− 0·22
20	19·22	+ 0·06
21	18·89	− 0·05
25	18·06	− 0·02
27	17·56	− 0·08
30	17·10	+ 0·14
31	16·74	+ 0·02
February 6	15·46	+ 0·10
7	15·33	+ 0·21
8	14·88	− 0·02
10	14·44	− 0·02
11	14·28	+ 0·04
12	14·05	+ 0·03
13	13·64	− 0·16
14	13·33	− 0·25
18	12·64	− 0·12
25	11·30	− 0·14
26	11·24	− 0·04
27	10·92	− 0·20
March 2	10·38	− 0·12
4	10·16	− 0·06
6	10·00	+ 0·02
7	9·64	− 0·22
9	9·58	− 0·08
11	9·46	0·00
12	9·38	0·00
13	9·44	+ 0·14
16	8·98	− 0·10
17	8·88	− 0·14
18	8·88	− 0·10
21	8·76	− 0·10
26	8·46	− 0·32
27	8·66	− 0·12
28	8·64	− 0·14
31	8·70	− 0·14
April 3	8·88	− 0·06
4	8·96	− 0·04
9	9·29	− 0·03
10	9·14	− 0·26
14	9·70	− 0·06
15	9·88	+ 0·02
16	9·80	− 0·18
18	10·10	− 0·10
22	10·43	− 0·27
23	10·78	− 0·06
24	10·92	− 0·06
25	11·00	− 0·10
28	11·54	0·00
30	11·60	− 0·24
May 1	11·88	− 0·12
2	12·16	0·00
1840.	m. s.	s.
May 19	2 14·74	− 0·18
20	14·98	− 0·08
21	15·16	− 0·06
22	15·42	+ 0·06
25	15·72	− 0·08
27	15·88	− 0·18
28	16·08	− 0·10
29	16·28	− 0·04
June 2	16·68	− 0·10
3	17·02	+ 0·14
8	17·34	0·00
10	17·38	− 0·08
11	17·40	− 0·12
17	17·62	− 0·14
18	17·64	− 0·14
19	17·51	− 0·27
20	17·65	− 0·13
22	17·66	− 0·10
29	17·32	− 0·18
July 4	17·08	− 0·06
10	16·48	− 0·02
11	16·32	− 0·06
13	16·06	− 0·08
15	15·76	− 0·10
16	15·72	0·00
18	15·51	+ 0·07
20	15·02	− 0·10
23	14·74	+ 0·10
25	14·18	− 0·12
29	13·62	0·00
30	13·48	+ 0·02
31	13·19	− 0·09
August 1	13·08	− 0·04
3	12·94	+ 0·16
14	10·74	− 0·20
15	10·70	− 0·08
21	9·72	− 0·20
22	9·64	− 0·16
24	9·46	− 0·08
26	9·04	− 0·26
28	8·90	− 0·18
29	8·88	− 0·10
31	8·66	− 0·12
September 1	8·58	− 0·12
3	8·36	− 0·18
10	8·00	− 0·14
11	8·08	− 0·02
12	7·90	− 0·18
15	8·04	+ 0·02
18	8·06	+ 0·04
19	8·02	− 0·02
21	8·00	− 0·08
23	8·04	− 0·10
24	8·10	− 0·08

Date.	Observed Time.	Difference from Nautical Almanac.	Date.	Observed Time.	Difference from Nautical Almanac.
1840.	m. s.	s.	1840.	m. s.	s.
September 25	2 8·18	− 0·04	November 18	2 17·92	+ 0·08
28	8·26	− 0·14	19	18·12	+ 0·06
			20	18·24	− 0·04
October 2	8·60	− 0·14	23	19·18	+ 0·24
5	9·06	0·00	24	19·04	− 0·12
6	9·14	− 0·02	26	19·96	+ 0·40
9	9·44	− 0·12	27	19·66	− 0·10
10	9·48	− 0·20	28	20·06	+ 0·12
12	9·82	− 0·14	30	20·53	+ 0·21
13	10·12	0·00			
14	10·12	− 0·16	December 1	20·44	− 0·06
16	10·66	+ 0·06	2	20·74	+ 0·08
17	10·74	− 0·04	9	21·88	+ 0·24
19	11·16	+ 0·02	14	22·06	− 0·06
20	11·24	− 0·08	22	22·32	− 0·08
22	11·72	+ 0·02	23	22·36	− 0·04
30	13·38	− 0·02	24	22·44	+ 0·06
			26	22·44	+ 0·12
November 3	14·12	− 0·20	29	22·10	− 0·08
11	16·31	+ 0·11			

Mean Difference from Nautical Almanac by 144 observations = − 0s·06.

VERTICAL DIAMETER OF THE SUN OBSERVED WITH THE MURAL CIRCLE.

Date.	Observed Diameter.	Difference from Nautical Almanac.	Date.	Observed Diameter.	Difference from Nautical Almanac.
	′ ″	″		′ ″	″
March 31	32 0·1	− 1·7	June 3	31 33·5	− 0·1
			29	31 30·8	+ 0·8
April 4	31 56·9	− 2·7			
24	31 49·2	0·0	July 4	31 29·6	− 0·4
30	31 47·7	+ 1·5	10	31 31·3	+ 0·9
			16	31 31·0	0·0
May 1	31 46·8	+ 1·2			
2	31 46·0	+ 0·8	Aug. 7	31 37·4	+ 1·6
19	31 36·1	− 2·1	8	31 35·8	− 0·4
20	31 37·7	− 0·3	14	31 38·5	+ 0·3
21	31 38·6	+ 1·0			
25	31 38·3	+ 2·1	September 3	31 48·6	+ 2·0
			21	31 55·5	− 0·3
June 2	31 33·2	− 0·6			

Mean Difference from Nautical Almanac by 21 observations = + 0″·17.

OBSERVED SIDEREAL TIMES OF THE MOON'S DIAMETER PASSING THE MERIDIAN.

1. BRIGHT LIMBS.		
Date.	Observed Time.	Difference from Nautical Almanac.
1840.	m. s.	s.
January 18	2 27·60	+ 0·18
2. BRIGHT AND DARK LIMBS.		
January 12	2 17·60	− 0·18
March 17	2 6·11	− 0·09
April 16	2 7·48	+ 0·08
December 1	2 6·90	+ 0·28
2	2 7·32	+ 0·34

VERTICAL DIAMETER OF THE MOON OBSERVED WITH THE MURAL CIRCLE.

Date.	Vertical Diameter of the Moon from Observation.	Difference from Nautical Almanac.
1840.	′ ″	″
January 15	32 45·3	+ 1·4
February 12	32 15·6	− 1·6
March 11	32 5·3	+ 2·7
December 10	33 16·9	+ 0·1

OBSERVED RIGHT ASCENSIONS AND DECLINATIONS OF THE SUN.

Date.	RIGHT ASCENSION.			DECLINATION.			
	Limb observed.	Right Ascension of Centre.	Difference from Nautical Almanac.	Limb observed.	Parallax in Declination.	Declination of Centre.	Difference from Nautical Almanac.
1840.		h. m. s.	s.		″	° ′ ″	″
Jan. 6	I. & II.	19 6 33·36	− 0·11	……	……	………………	………
11	I. & II.	19 28 24·08	+ 0·17	S.	+ 8·5	− 21 54 28·0	− 2·5
16	I. & II.	19 49 59·51	+ 0·25	N.	8·5	− 21 3 22·0	+ 1·5
17	I. & II.	19 54 16·39	+ 0·10	S.	8·5	− 20 51 56·0	+ 1·8
20	I. & II.	20 7 3·17	+ 0·09	N.	8·4	− 20 15 19·9	+ 0·5
21	I. & II.	20 11 17·32	+ 0·13	S.	8·4	− 20 2 18·7	+ 1·9
25	I. & II.	20 28 6·26	+ 0·27	……	……	………………	………
27	I. & II.	20 36 25·89	+ 0·16	N.	8·4	− 18 36 45·9	+ 2·2
30	I. & II.	20 48 49·39	+ 0·01	S.	8·3	− 17 49 23·4	− 0·8
31	I. & II.	20 52 55·68	+ 0·05	N.	8·3	− 17 32 58·1	− 2·9
Feb. 6	I. & II.	21 17 15·94	+ 0·04	S.	8·2	− 15 47 53·9	− 0·3
7	I. & II.	21 21 16·44	+ 0·05	……	……	………………	………
8	I. & II.	21 25 16·12	+ 0·08	N.	8·1	− 15 10 40·5	− 1·1
10	I. & II.	21 33 12·98	+ 0·07	S.	8·1	− 14 32 25·1	− 1·0
11	I. & II.	21 37 10·09	− 0·05	N.	8·1	− 14 12 53·4	+ 1·2
12	I. & II.	21 41 6·36	− 0·20	S.	8·1	− 13 53 11·5	− 0·2
13	I. & II.	21 45 2·23	+ 0·03	N.	8·0	− 13 33 12·6	+ 1·6
14	I. & II.	21 48 56·92	− 0·16	S.	8·0	− 13 13 1·1	+ 3·0
18	I. & II.	22 4 29·34	+ 0·25	N.	8·0	− 11 50 19·7	+ 0·5
22	………	………………	………	S.	7·9	− 10 24 35·9	+ 1·3
24	II.	22 27 26·34	− 0·23	N.	7·8	− 9 40 48·9	− 2·7
25	I. & II.	22 31 13·98	0·00	S.	7·8	− 9 18 37·1	+ 0·1
26	I. & II.	22 35 0·88	+ 0·06	N.	7·8	− 8 56 22·3	− 2·6
27	I. & II.	22 38 47·11	+ 0·01	S.	7·8	− 8 33 54·3	− 0·2

Date.	RIGHT ASCENSION.			DECLINATION.			
	Limb observed.	Right Ascension of Centre.	Difference from Nautical Almanac.	Limb observed.	Parallax in Declination.	Declination of Centre.	Difference from Nautical Almanac.
1840.		h. m. s.	s.		″	° ′ ″	″
Mar. 2	I. & II.	22 53 46·96	0·00	N.	+7·7	− 7 3 0·2	− 0·7
4	I. & II.	23 1 13·95	+ 0·03	S.	7·6	− 6 16 53·9	+ 0·9
5	II.	23 4 56·66	− 0·06	N.	7·6	− 5 52 44·6	− 0·1
6	I. & II.	23 8 39·02	− 0·06	S.	7·6	− 5 30 29·1	+ 0·3
7	I. & II.	23 12 21·07	+ 0·05	N.	7·5	− 5 7 12·9	− 2·9
9	I. & II.	23 19 43·72	+ 0·01	S.	7·5	− 4 20 20·4	− 0·4
11	I. & II.	23 27 4·94	− 0·02	N.	7·4	− 3 33 18·4	− 1·0
12	I. & II.	23 30 45·12	+ 0·04	S.	7·4	− 3 9 41·0	+ 1·4
13	I. & II.	23 34 24·92	+ 0·02	N.	7·3	− 2 46 6·2	− 0·7
16	I. & II.	23 45 22·83	+ 0·10	......	......	....	....
17	I. & II.	23 49 1·52	− 0·03	S.	7·2	− 1 11 25·9	− 1·2
18	I. & II.	23 52 40·33	+ 0·16	N.	7·1	− 0 47 46·3	− 3·2
21	I. & II.	0 3 35·25	+ 0·12	S.	7·0	+ 0 23 17·0	− 2·9
26	I. & II.	0 21 45·11	− 0·09	......	......	....	....
27	I. & II.	0 25 23·10	− 0·08	N.	6·7	+ 2 44 44·8	− 3·4
28	I. & II.	0 29 1·02	− 0·16	S.	6·7	+ 3 8 12·0	− 2·0
31	I. & II.	0 39 55·38	− 0·19	N. & S.	6·6	+ 4 18 8·4	+ 0·1
Apr. 3	I. & II.	0 50 50·75	− 0·10	S.	6·5	+ 5 27 17·1	− 3·7
4	I. & II.	0 54 29·60	+ 0·04	N. & S.	6·4	+ 5 50 9·8	− 4·2
6	II.	1 1 47·48	− 0·03	......	......	....	....
9	I. & II.	1 12 46·00	+ 0·08	N.	6·3	+ 7 42 59·8	− 0·5
10	I. & II.	1 16 25·84	− 0·01	......	......	....	....
14	I. & II.	1 31 8·21	− 0·14	......	......	....	....
15	I. & II.	1 34 49·61	− 0·15	......	......	....	....
16	I. & II.	1 38 31·51	− 0·01	......	......	....	....
17	II.	1 42 13·67	0·00	......	......	....	....
18	I. & II.	1 45 56·19	0·00	......	......	....	....
22	I. & II.	2 0 50·48	− 0·10	S.	5·8	+ 12 19 10·7	+ 0·3
23	I. & II.	2 4 35·12	− 0·19	......	......	....	....
24	I. & II.	2 8 20·35	− 0·18	N. & S.	5·7	+ 12 58 56·7	− 0·7
25	I. & II.	2 12 6·18	− 0·07	S.	5·7	+ 13 2 31·6	− 0·5
28	I. & II.	2 23 26·41	− 0·06	N.	5·5	+ 14 15 54·6	− 2·2
30	I. & II.	2 31 2·60	+ 0·01	N. & S.	5·4	+ 14 53 2·6	− 1·1
May 1	I. & II.	2 34 51·54	+ 0·08	N. & S.	5·4	+ 15 11 14·3	− 1·0
2	I. & II.	2 38 40·90	+ 0·03	N. & S.	5·4	+ 15 29 10·5	− 1·3
19	I. & II.	3 45 6·11	+ 0·21	N. & S.	4·8	+ 19 50 54·0	− 0·9
20	I. & II.	3 49 5·46	+ 0·10	N. & S.	4·8	+ 20 3 28·2	− 1·5
21	I. & II.	3 53 5·32	− 0·08	N. & S.	4·8	+ 20 15 41·2	− 3·0
22	I. & II.	3 57 5·92	− 0·06	......	......	....	....
25	I. & II.	4 9 10·92	− 0·05	N. & S.	4·7	+ 21 1 12·5	− 0·6
27	I. & II.	4 17 16·96	+ 0·05	S.	4·7	+ 21 21 50·2	+ 1·6
28	I. & II.	4 21 20·65	+ 0·04	......	......	....	....
29	I. & II.	4 25 24·86	+ 0·06	N.	4·6	+ 21 40 53·8	− 1·8
June 1	II.	4 37 39·92	− 0·08	......	......	....	....
2	I. & II.	4 41 45·90	0·00	N. & S.	4·5	+ 22 14 37·5	− 0·1
3	I. & II.	4 45 52·16	0·00	N. & S.	4·5	+ 22 22 2·5	− 2·8
8	I. & II.	5 6 28·18	− 0·08	......	......	....	....
10	I. & II.	5 14 44·45	− 0·13	......	......	....	....
11	I. & II.	5 18 53·04	− 0·03	......	......	....	....
17	I. & II.	5 43 47·37	0·00	......	......	....	....
18	I. & II.	5 47 56·90	+ 0·10	......	......	....	....
19	I. & II.	5 52 6·40	+ 0·11	......	......	....	....
20	I. & II.	5 56 15·84	+ 0·03	......	......	....	....
22	I. & II.	6 4 34·88	0·00	......	......	....	....
27	II.	6 25 21·61	+ 0·01	......	......	....	....
29	I. & II.	6 33 39·30	− 0·08	N. & S.	4·4	+ 23 14 13·1	+ 1·7
30	II.	6 37 47·98	+ 0·03	......	......	....	....

Date.	RIGHT ASCENSION.			DECLINATION.			
	Limb observed.	Right Ascension of Centre.	Difference from Nautical Almanac.	Limb observed.	Parallax in Declination.	Declination of Centre.	Difference from Nautical Almanac.
1840.		h. m. s.	s.		"	° ' "	"
July 4	I. & II.	6 54 19·51	− 0·07	N. & S.	+4·4	+ 22 32 26·2	− 1·2
7	I.	7 6 40·20	+ 0·36	......	......	....	....
9	I.	7 14 51·46	+ 0·05	N.	4·5	+ 22 20 44·7	− 2·0
10	I. & II.	7 18 56·53	− 0·01	N. & S.	4·5	+ 22 13 17·9	+ 1·2
11	I. & II.	7 23 1·31	+ 0·06	S.	4·6	+ 22 5 24·4	+ 0·5
13	I. & II.	7 31 9·28	+ 0·01	N.	4·6	+ 21 48 29·7	− 0·5
15	I. & II.	7 39 15·43	+ 0·07	S.	4·7	+ 21 30 7·9	+ 0·6
16	I. & II.	7 43 17·71	+ 0·03	N. & S.	4·7	+ 21 20 22·0	− 0·9
18	I. & II.	7 51 20·60	− 0·15	N.	4·7	+ 20 59 48·2	− 0·7
20	I. & II.	7 59 21·72	− 0·01	S.	4·8	+ 20 37 50·2	+ 0·7
22	I.	8 7 20·78	+ 0·21	N.	4·8	+ 20 14 26·2	− 0·3
23	I. & II.	8 11 19·19	+ 0·03	......	......	....	....
24	I.	8 15 17·20	0·00	......	......	....	....
25	I. & II.	8 19 14·88	+ 0·21	S.	4·9	+ 19 36 48·9	− 0·5
27	II.	8 27 7·82	− 0·06	N.	4·9	+ 19 10 6·2	+ 0·2
28	II.	8 31 3·74	+ 0·14	......	......	....	....
29	I. & II.	8 34 58·86	+ 0·16	S.	5·0	+ 18 42 6·3	− 0·1
30	I. & II.	8 38 53·45	+ 0·24	N.	5·0	+ 18 27 41·2	+ 2·4
31	I. & II.	8 42 47·22	+ 0·12	S.	5·1	+ 18 12 53·3	+ 0·4
Aug. 1	I. & II.	8 46 40·56	+ 0·18	N.	5·1	+ 17 57 47·2	− 2·1
3	I. & II.	8 54 24·99	− 0·09	S.	5·1	+ 17 26 49·0	− 0·5
4	II.	8 58 16·57	+ 0·07	N.	5·1	+ 17 10 52·7	− 1·2
5	II.	9 2 7·37	+ 0·07	S.	5·2	+ 16 54 42·1	+ 0·2
6	....	....	....	N.	5·2	+ 16 38 13·5	+ 0·1
7	....	....	....	N. & S.	5·2	+ 16 21 28·2	− 0·8
8	....	....	....	N. & S.	5·3	+ 16 4 28·9	0·0
11	II.	9 24 59·15	− 0·30	S.	5·4	+ 15 11 57·7	+ 0·6
14	I. & II.	9 36 17·60	− 0·13	N. & S.	5·5	+ 14 17 14·5	0·0
15	I. & II.	9 40 2·79	+ 0·05	......	......	....	....
21	I. & II.	10 2 22·13	− 0·25	N.	5·7	+ 12 1 50·7	+ 1·0
22	I. & II.	10 6 3·97	− 0·08	......	.....	....	....
24	I. & II.	10 13 26·06	− 0·05	S.	5·9	+ 11 0 46·0	− 1·6
26	I. & II.	10 20 46·38	− 0·15	N.	5·9	+ 10 19 11·5	− 1·5
28	I. & II.	10 28 5·32	− 0·09	S.	6·0	+ 9 36 57·6	− 1·0
29	I. & II.	10 31 44·31	+ 0·01	N.	6·0	+ 9 15 36·1	− 1·4
31	I. & II.	10 39 0·89	− 0·16	S.	6·2	+ 8 32 29·2	+ 0·1
Sept. 1	I. & II.	10 42 38·82	− 0·13	S.	6·2	+ 8 10 40·1	− 2·4
2	II.	10 46 16·32	− 0·23	N.	6·2	+ 7 48 47·9	− 0·1
3	I. & II.	10 49 53·63	− 0·22	N. & S.	6·2	+ 7 26 45·4	− 0·7
5	I.	10 57 7·62	− 0·02	......	......	....	....
10	I. & II.	11 16 8·08	− 0·27	N.	6·5	+ 4 50 30·0	− 0·9
11	I. & II.	11 18 43·84	− 0·15	S.	6·6	+ 4 26 40·5	− 0·4
12	I. & II.	11 22 19·31	− 0·22	N.	6·6	+ 4 3 46·0	− 0·1
15	I. & II.	11 33 5·71	− 0·02	S.	6·7	+ 2 54 36·7	− 0·2
18	I. & II.	11 43 51·95	+ 0·15	N.	6·8	+ 1 44 55·3	− 1·4
19	I. & II.	11 47 27·17	− 0·05	N.	6·8	+ 1 21 36·0	− 1·8
21	I. & II.	11 54 38·39	+ 0·07	N. & S.	6·9	+ 0 34 52·9	− 1·3
23	I. & II.	12 1 49·69	− 0·13	S.	7·0	− 0 11 56·0	− 1·0
24	I. & II.	12 5 25·80	+ 0·03	N.	7·0	− 0 35 22·5	− 1·6
25	I. & II.	12 9 1·90	+ 0·02	S.	7·1	− 0 58 47·5	− 0·5
28	I. & II.	12 19 51·31	− 0·04	N.	7·1	− 2 9 4·0	− 0·5
Oct. 1	II.	12 30 42·94	+ 0·03	......	......	....	....
2	I. & II.	12 34 20·70	+ 0·06	S.	7·3	− 3 42 25·9	+ 1·5
3	I.	12 37 58·90	+ 0·23	......	......	....	....
5	I. & II.	12 45 15·64	− 0·08	N.	7·4	− 4 52 4·1	− 0·4
6	I. & II.	12 48 54·77	+ 0·01	......	......	....	....
9	I. & II.	12 59 54·31	+ 0·03	S.	7·5	− 6 23 58·8	− 0·6

Date.	RIGHT ASCENSION.			DECLINATION.			
	Limb observed.	Right Ascension of Centre.	Difference from Nautical Almanac.	Limb observed.	Parallax in Declination.	Declination of Centre.	Difference from Nautical Almanac.
1840.		h. m. s.	s.		"	° ′ "	"
Oct. 10	I. & II.	13 3 35·18	+ 0·19	......	......	....	....
12	I. & II.	13 10 58·01	+ 0·15	N.	+7·6	− 7 32 1·9	− 0·2
13	I. & II.	13 14 40·03	− 0·04	S.	7·6	− 7 54 32·0	− 0·9
14	I. & II.	13 18 22·83	+ 0·02	N.	7·6	− 8 16 56·3	− 2·4
16	I. & II.	13 25 49·96	− 0·05	S.	7·7	− 9 1 19·8	− 1·1
17	I. & II.	13 29 34·35	− 0·15	N.	7·7	− 9 23 20·9	− 1·0
19	I. & II.	13 37 5·23	− 0·13	S.	7·8	− 10 6 57·8	0·0
20	I. & II.	13 40 51·83	+ 0·07	N.	7·8	− 10 28 35·1	− 1·2
22	I. & II.	13 48 26·35	− 0·22	S.	7·9	− 11 11 19·1	− 1·3
24	....	....	....	N.	7·9	− 11 53 22·6	− 1·1
30	I. & II.	14 19 14·43	− 0·12	S.	8·1	− 13 55 0·1	− 2·3
31	....	....	....	N.	8·0	− 14 14 31·2	− 1·9
Nov. 3	I. & II.	14 34 56·71	− 0·08	......	......	....	....
7	II.	14 50 51·77	− 0·06	......	......	....	....
11	I. & II.	15 7 0·24	+ 0·01	......	......	....	....
18	I. & II.	15 35 48·08	+ 0·05	S.	8·3	− 19 20 13·3	− 1·8
19	I. & II.	15 39 58·21	− 0·08	N.	8·3	− 19 34 13·9	− 0·6
20	I. & II.	15 44 9·29	− 0·09	......	......	....	....
23	I. & II.	15 56 47·65	+ 0·09	......	......	....	....
24	I. & II.	16 1 1·92	+ 0·04	S.	8·4	− 20 38 56·0	0·0
26	I. & II.	16 9 32·51	− 0·29	N.	8·4	− 21 2 11·0	− 1·2
27	I. & II.	16 13 49·23	− 0·13	S.	8·4	− 21 13 11·2	0·0
28	I. & II.	16 18 6·45	− 0·16	N.	8·4	− 21 23 49·6	− 1·0
30	I. & II.	16 26 43·12	− 0·02	S.	8·5	− 21 43 49·9	− 0·2
Dec. 1	I. & II.	16 31 2·41	+ 0·03	N.	8·4	− 21 53 13·4	− 0·7
2	I. & II.	16 35 22·46	+ 0·24	S.	8·5	− 22 2 11·4	− 0·8
9	I. & II.	17 5 56·61	+ 0·13	N.	8·5	− 22 52 50·0	− 3·2
14	I. & II.	17 28 0·05	+ 0·04	S.	8·5	− 23 15 29·0	− 0·7
18	I.	17 45 44·25	+ 0·06	N.	8·5	− 23 25 17·6	− 0·6
21	II.	17 59 4·38	+ 0·26	......	......	....	....
22	I. & II.	18 3 31·08	+ 0·18	S.	8·5	− 23 27 34·6	− 0·7
23	I. & II.	18 7 58·05	+ 0·35	N.	8·5	− 23 26 58·6	− 1·4
24	I. & II.	18 12 24·67	+ 0·20	S.	8·5	− 23 25 53·5	− 1·3
26	I. & II.	18 21 17·84	+ 0·09	N.	8·5	− 23 22 18·7	− 1·5
29	I. & II.	18 34 36·69	+ 0·26	S.	8·5	− 23 13 22·2	+ 1·1
31	I.	18 43 27·80	+ 0·14	N.	8·5	− 23 5 9·4	− 1·8

Date.	Right Ascension.			Declination.				
	Limb observed.	Right Ascension of Centre.	Difference from Nautical Almanac.	Limb observed.	Parallax in Declination.	Semidiameter.	Declination of Centre.	Difference from Nautical Almanac.
1840.		h. m. s.	s.		"	' "	° ' "	"
Jan. 11	I.	0 42 55·69	− 0·03	......	....	....	....	....
12	I.	1 35 41·65	− 0·08	S.	+39 48·4	+16 7·0	+14 12 30·2	−0·2
	II. (*a*)	1 35 41·23	− 0·50	......	....	....	....	....
15	I.	4 40 23·28	− 0·71	N.	28 42·0	−16 23·8	+27 22 22·8	−2·4
	......	....	....	S.	29 12·5	+16 23·8	+27 22 25·4	+0·2
16	I.	5 49 28·89	− 0·57	N.	27 51·5	−16 23·6	+28 15 54·0	−1·6
17	I.	6 58 7·21	− 0·87	N.	28 55·6	−16 19·5	+26 59 32·6	+2·7
18	I.	8 3 12·57	− 0·96	N.	31 36·0	−16 11·7	+23 46 15·5	+1·9
	II.	8 3 12·49	− 1·04	......	....	....	....	....
19	II.	9 3 5·26	− 1·35	N.	35 15·1	−16 0·7	+19 4 1·6	+1·6
26	II.	14 40 35·28	− 0·25	S.	52 51·8	+14 48·4	−20 40 41·7	+0·4
Feb. 7	I.	0 27 19·99	− 0·45	......	....	....	....	....
8	I.	1 19 25·05	− 0·08	S.	40 55·4	+16 3·0	+12 30 5·6	−5·6
10	I.	3 13 42·58	− 0·11	......	....	....	....	....
11	I.	4 17 2·43	− 0·42	S.	29 25·7	+16 10·7	+26 41 52·8	−1·0
12	......	....	....	S.	27 58·3	+16 10·5	+28 17 5·1	+2·5
	I.	5 23 26·34	− 0·45	N.	27 28·4	−16 10·5	+28 16 59·7	−2·9
13	I.	6 30 29·76	− 0·87	N.	27 49·6	−16 8·7	+27 50 15·5	+1·4
14	I.	7 35 26·13	− 1·08	N.	29 53·2	−16 4·4	+25 26 0·8	+3·2
26	II.	17 52 17·75	− 0·02	......	....	....	....	....
Mar. 6	I.	1 0 30·45	− 0·46	......	....	....	....	....
8	I.	2 54 52·26	− 0·38	......	....	....	....	....
9	I.	3 57 40·63	− 0·35	S.	30 13·9	+16 12·0	+25 51 22·6	−2·1
10	I.	5 3 23·30	− 0·07	......	....	....	....	....
11	I.	6 9 52·15	− 0·76	N.	27 21·0	−16 3·3	+28 11 31·2	−2·0
	......	....	....	S.	27 50·4	+16 3·3	+28 11 32·3	−0·9
12	I.	7 14 33·56	− 0·94	N.	28 47·6	−15 57·5	+26 25 1·5	+2·4
13	I.	8 15 30·36	− 0·70	N.	31 37·1	−15 50·9	+22 57 52·6	+4·5
16	I.	10 53 20·66	− 0·12	......	....	....	....	....
17	I.	11 40 19·95	+ 0·05	N.	46 24·4	−15 18·6	+ 0 16 53·7	+0·4
	II.	11 40 19·66	− 0·24	S.	46 41·3	+15 18·6	+ 0 16 58·3	+5·0
18	II.	12 26 22·62	− 0·13	S.	49 17·4	+15 10·2	− 5 52 11·7	+0·8
19	II.	13 12 33·44	− 0·09	S.	51 10·7	+15 2·5	−11 40 30·6	+3·0
Apr. 6	I.	4 40 37·67	− 0·62	S.	29 7·9	+16 21·6	+27 22 44·9	−2·1
9	I.	7 57 37·49	− 0·44	......	....	....	....	....
10	I.	8 55 10·01	− 0·62	......	....	....	....	....
13	I.	11 24 12·34	− 0·33	......	....	....	....	....
15	I.	12 55 28·35	+ 0·07	......	....	....	....	....
16	I.	13 42 0·00	− 0·07	......	....	....	....	....
	II.	13 41 59·84	− 0·23	......	....	....	....	....
17	II.	14 30 14·75	− 0·19	......	....	....	....	....
18	II.	15 20 42·56	− 0·11	S.	53 19·0	+14 47·4	−23 35 26·6	+1·6
May 24	II.	22 55 21·83	+ 0·09	......	....	....	....	....
June 3	I.	8 11 10·07	− 1·00	......	....	....	....	....
7	I.	11 40 27·67	− 0·01	......	....	....	....	....
10	I.	13 58 30·32	− 0·23	......	....	....	....	....
13	I.	16 31 43·68	− 0·14	......	....	....	....	....
July 7	I.	13 41 56·83	− 0·30	......	....	....	....	....
10	I.	16 13 24·03	− 0·35	N.	53 31·3	−14 45·4	−26 23 18·2	−3·0
16	II.	21 35 28·13	− 0·55	......	....	....	....	....

(*a*) Dark or unenlightened Limb, very faint.

Date.	RIGHT ASCENSION.			DECLINATION.				
	Limb observed.	Right Ascension of Centre.	Difference from Nautical Almanac.	Limb observed.	Parallax in Declination.	Semidiameter.	Declination of Centre.	Difference from Nautical Almanac.
1840.		h. m. s.	s.		"	' "	° ' "	"
Aug. 2	I.	12 35 19·61	− 0·39	......	....	....	....	....
6	I.	15 53 29·82	− 0·02	N.	+53 38·1	−14 48·9	−25 39 7·1	− 4·4
8	I.	17 43 9·37	+ 0·32	N.	53 53·4	−14 48·7	−28 1 15·3	+ 3·7
9	I.	18 38 54·10	+ 0·39	......	....	....	....	....
11	I.	20 26 56·14	+ 0·04	......	....	....	....	....
12	I.	21 18 6·05	− 0·05	S.	53 22·4	+15 12·8	−16 45 16·0	+ 0·2
20	II.	4 22 36·12	− 0·98	......	....	....	....	....
22	II.	6 37 15·23	− 0·53	......	....	....	....	....
30	II.	13 1 26·96	− 0·93	......	....	....	....	....
Sept. 3	I.	16 25 42·68	− 0·08	......	....	....	....	....
4	I.	17 20 48·53	+ 0·33	......	....	....	....	....
5	I.	18 16 24·51	+ 0·26	......	....	....	....	....
7	I.	20 5 12·97	+ 0·26	S.	54 7·9	+15 2·6	−22 56 14·7	− 1·4
9	I.	21 47 29·20	+ 0·11	S.	52 57·7	+15 21·9	−13 37 38·7	− 2·8
10	I.	22 36 39·70	− 0·16	S.	51 20·9	+15 32·7	− 7 44 45·1	− 3·3
11	II.	23 25 33·59	− 0·32	N.	48 33·7	−15 43·1	− 1 22 40·5	− 4·7
12	......	....	....	N.	45 8·4	−15 52·3	+ 5 11 11·3	− 4·3
13	II.	1 6 53·17	− 0·34	N.	41 3·3	−16 0·0	+11 36 46·2	− 4·3
20	II.	8 22 33·26	− 0·88	......	....	....	....	....
Oct. 3	I.	18 48 30·37	+ 0·34	......	....	....	....	....
6	I.	21 24 46·25	+ 0·64	......	....	....	....	....
7	I.	22 14 1·11	+ 0·51	......	....	....	....	....
8	I.	23 2 54·44	+ 0·26	......	....	....	....	....
9	I.	23 52 29·68	+ 0·21	S.	47 22·3	+15 53·6	+ 2 12 33·5	− 5·4
11	II.	1 38 34·93	− 0·45	N.	39 0·5	−16 14·6	+15 5 41·6	− 6·1
12	II.	2 37 19·16	− 0·89	N.	34 41·0	−16 20·8	+20 36 5·7	− 4·0
18	II.	9 2 23·08	− 1·10	S.	36 17·2	+15 55·2	+18 4 22·1	+ 8·8
19	II.	9 56 0·00	− 0·94	......	....	....	....	....
Nov. 4	I.	22 39 19·65	+ 0·03	S.	50 44·5	+15 26·1	− 7 7 46·7	−10·9
5	I.	23 27 35·58	− 0·23	S.	48 31·7	+15 41·8	− 0 54 13·6	−10·4
6	I.	0 17 28·67	− 0·12	......	....	....	....	....
7	I.	1 10 21·00	− 0·20	S.	41 40·8	+16 12·2	+12 1 17·2	− 7·8
10	II.	4 17 12·17	− 0·86	N.	30 6·3	−16 37·0	+26 17 25·8	− 4·3
16	II.	10 31 10·24	− 0·70	S.	43 11·0	+15 43·0	+ 8 1 30·3	+14·8
17	II.	11 19 45·63	− 0·63	S.	46 28·6	+15 31·4	+ 1 49 13·6	+14·0
18	II.	12 6 55·43	− 0·54	S.	49 9·2	+15 20·8	− 4 19 18·3	+14·6
28	I.	19 53 48·69	− 0·71	......	....	....	....	....
30	I.	21 32 12·30	− 0·22	S.	51 58·0	+14 59·2	−14 38 41·2	− 7·3
Dec. 1	I.	22 19 7·56	− 0·36	S.	50 42·0	+15 9·5	− 9 18 39·7	− 7·2
	II.	22 19 7·62	− 0·30	......	....	....	....	....
2	I.	23 5 44·57	− 0·29	S.	48 49·2	+15 22·4	− 3 27 31·0	− 8·7
	II.	23 5 44·71	− 0·16	......	....	....	....	....
5	I.	1 36 40·36	− 0·70	......	....	....	....	....
7	I.	3 40 9·42	− 0·37	S.	32 5·2	+16 37·5	+24 42 59·3	− 6·8
9	II.	6 2 1·00	− 0·89	N.	29 22·7	−16 45·2	+27 19 11·5	− 3·7
10	II.	7 12 26·69	− 0·75	N.	31 10·7	−16 40·4	+25 14 58·7	+ 1·1
	......	....	....	S.	31 41·5	+16 40·4	+25 15 2·6	+ 5·0
17	II.	13 26 37·13	− 0·38	S.	52 17·3	+15 7·6	−14 6 14·6	+ 3·9
26	I.	20 27 35·91[1]	− 0·57	......	....	....	....	....
29	I.	22 48 57·45	− 0·20	S.	48 57·4	+15 8·4	− 5 21 21·1	− 1·8
31	I.	0 22 10·38	− 0·03	......	....	....	....	....

Date.	Right Ascension.			Declination.		
	Limb observed.	Right Ascension of Centre.	Difference from Nautical Almanac.	Parallax in Declination.	Declination of Centre.	Difference from Nautical Almanac.
1840.		h. m. s.	s.	"	° ' "	"
Jan. 13	II.	18 3 15·01	+ 0·21	......	....	....
19	II.	18 37 26·68	+ 0·28	......	....	....
Mar. 2	I.	23 19 25·74	− 0·11	+5·7	− 5 38 7·7	− 3·3
4	I.	23 33 16·86	− 0·24	5·8	− 3 50 44·8	− 3·8
5	I.	23 40 9·00	− 0·19	5·8	− 2 56 4·7	− 3·1
6	I.	23 46 57·72	− 0·17	5·8	− 2 1 1·7	− 5·1
7	I.	23 53 42·15	− 0·17	5·8	− 1 5 43·5	− 6·4
9	I.	0 6 53·98	− 0·11	5·9	+ 0 44 50·4	− 4·2
17	......	....	....	6·4	+ 7 27 18·7	− 5·5
18	I.	0 57 0·09	+ 0·08	6·6	+ 8 8 39·3	− 5·3
Apr. 23	II.	0 46 22·68	+ 0·12	......	....	....
29	......	....	....	9·1	+ 3 23 28·6	+ 6·5
May 1	II.	1 3 34·28	− 0·01	8·7	+ 3 41 5·2	+ 3·6
20	II.	2 31 44·82	− 0·14	5·4	+ 12 23 32·2	+ 0·4
21	II.	2 38 0·76	− 0·20	......	....	....
28	II.	3 27 1·88	− 0·15	4·4	+ 17 31 36·7	− 2·1
June 1	II.	3 59 21·25	− 0·30	4·0	+ 20 0 26·1	− 2·8
2	II.	4 7 55·53	− 0·27	3·9	+ 20 35 18·5	− 4·7
17	I.	6 19 5·93	− 0·58	......	....	....
18	I.	6 28 21·10	− 0·66	......	....	....
July 4	I.	8 32 19·10	− 0·48	4·6	+ 20 14 49·4	+ 2·3
16	......	....	....	6·4	+ 14 6 42·0	+ 5·5
Aug. 25	II.	9 16 46·52	− 0·02	......	....	....
30	II.	9 29 18·36	− 0·20	6·3	+ 14 34 39·1	− 0·7
31	II.	9 33 18·40	− 0·38	6·1	+ 14 31 26·6	− 2·3
Sept. 2	......	....	....	5·8	+ 14 14 51·7	− 2·3
4	II.	9 53 25·24	− 0·39	......	....	....
9	II.	10 24 58·77	− 0·61	5·1	+ 11 35 7·9	− 1·3
10	II.	10 31 46·14	− 0·59	5·1	+ 11 1 15·2	+ 0·2
11	II.	10 38 38·39	− 0·57	5·0	+ 10 25 11·0	+ 0·8
14	II.	10 59 28·96	− 0·55	5·0	+ 8 26 8·2	+ 2·1
18	II.	11 27 8·41	− 0·49	5·0	+ 5 29 45·4	+ 2·0
Oct. 5	I.	13 9 39·17	− 0·33	5·4	− 6 51 58·3	+ 3·8
7	I.	13 21 40·34	− 0·09	......	....	....
9	I.	13 34 34·61	− 0·30	5·5	− 9 43 56·0	+ 3·3
12	I.	13 51 17·15	− 0·13	5·6	− 11 46 29·1	+ 4·7
13	I.	13 57 9·25	− 0·22	5·7	− 12 26 0·9	+ 4·6
19	I.	14 32 9·44	− 0·32	6·0	− 16 7 44·6	+ 3·4
24	I.	15 1 9·30	− 0·08	......	....	....
Nov. 12	I.	16 43 53·19	− 0·24	......	....	....
19	I.	17 6 43·91	+ 0·39	......	....	....
Dec. 10	II.	16 3 3·27	+ 0·67	......	....	....
20	II.	16 25 50·06	+ 0·41	......	....	....
22	II.	16 34 43·91	+ 0·39	7·8	− 20 10 45·4	− 1·7
28	II.	17 5 54·48	+ 0·09	......	....	....

Date.	Right Ascension.			Declination.		
	Limb observed.	Right Ascension of Centre.	Difference from Nautical Almanac.	Parallax in Declination.	Declination of Centre.	Difference from Nautical Almanac.
1840.		h. m. s.	s.	"	° ′ "	"
Mar. 11	II.	21 20 32·84	+ 0·15	+6·3	− 15 57 26·8	+ 5·0
16	II.	21 44 41·66	+ 0·25	......	....	....
20	II.	22 3 44·53	+ 0·19	5·9	− 12 46 16·2	+ 4·4
22	II.	22 13 10·91	+ 0·24	5·9	− 11 59 36·9	+ 2·7
Apr. 2	II.	23 4 10·83	− 0·06	5·7	− 7 21 25·1	+ 0·3
3	II.	23 8 45·08	− 0·01	5·4	− 6 54 38·2	+ 0·7
5	II.	23 17 51·91	+ 0·07	......	....	....
8	II.	23 31 28·48	+ 0·14	5·2	− 4 38 3·9	− 0·9
13	II.	23 54 1·84	+ 0·19	......	....	....
16	II.	0 7 30·59	− 0·13	......	....	....
17	II.	0 12 0·07	− 0·10	......	....	....
19	II.	0 20 58·75	− 0·19	......	....	....
22	II.	0 34 26·84	− 0·50	4·6	+ 1 58 36·1	− 2·1
23	II.	0 38 56·92	− 0·10	......	....	....
24	II.	0 43 26·81	− 0·07	......	....	....
27	II.	0 56 57·66	− 0·11	4·4	+ 4 21 5·6	− 3·6
29	II.	1 5 59·84	− 0·04	4·3	+ 5 17 40·9	− 2·5
May 1	II.	1 15 3·57	+ 0·05	4·2	+ 6 13 49·0	− 5·3
19	II.	2 38 30·26	− 0·22	3·5	+ 14 6 23·3	− 4·5
20	II.	2 43 16·78	+ 0·01	3·5	+ 14 30 7·8	− 3·9
21	II.	2 48 3·88	− 0·20	......	....	....
28	II.	3 22 5·61	+ 0·02	3·2	+ 17 26 32·6	− 4·9
June 1	II.	3 41 56·62	− 0·14	3·1	+ 18 44 33·4	− 5·0
7	II.	4 12 16·67	− 0·18	......	....	....
10	II.	4 27 40·87	− 0·40	......	....	....
22	II.	5 30 39·93	− 0·49	......	....	....
28	II.	6 2 43·93	− 0·40	......	....	....
July 3	II.	6 29 33·79	− 0·33	2·7	+ 23 37 6·2	− 1·7
8	II.	6 56 21·85	− 0·15	2·7	+ 23 21 1·8	− 2·7
9	II.	7 1 42·45	− 0·28	2·7	+ 23 16 43·3	− 3·5
10	II.	7 7 2·87	− 0·16	2·7	+ 23 9 45·5	− 1·7
Aug. 13	I.	9 55 20·03	+ 0·06	3·3	+ 14 8 12·7	+ 1·1
18	I.	10 19 9·77	− 0·03	3·5	+ 11 59 48·8	+ 0·7
21	I.	10 33 16·46	+ 0·09	3·5	+ 10 38 47·0	+ 0·5
24	......	....	....	3·6	+ 9 15 7·9	− 1·5
31	I.	11 19 28·29	+ 0·07	3·9	+ 5 51 49·2	− 1·1
Sept. 1	I.	11 24 2·31	+ 0·29	3·9	+ 5 22 2·9	+ 0·5
3	I.	11 33 8·31	+ 0·11	4·0	+ 4 22 0·0	+ 0·3
7	I.	11 51 16·21	+ 0·09	4·0	+ 2 21 29·1	+ 0·4
10	......	....	....	4·2	+ 0 48 29·1	+ 0·6
11	I.	12 9 20·39	+ 0·08	4·3	+ 0 17 42·0	− 0·4
15	I.	12 27 24·02	+ 0·44	......	....	....
18	I.	12 40 57·85	+ 0·63	4·4	− 3 17 52·3	+ 1·2
21	I.	12 54 33·60	+ 0·43	4·5	− 4 49 43·2	+ 1·3
23	I.	13 3 39·22	+ 0·24	4·7	− 5 50 31·9	+ 0·6
25	......	....	....	4·7	− 6 50 54·0	− 1·2
29	I.	13 31 8·93	0·00	4·8	− 8 49 46·1	− 0·4
Oct. 5	I.	13 59 4·49	+ 0·52	5·0	− 11 42 1·5	+ 0·9
8	I.	14 13 13·68	+ 0·43	5·0	− 13 4 39·4	+ 2·6
9	I.	14 17 58·77	+ 0·46	5·1	− 13 31 36·6	+ 2·5
12	I.	14 32 20·20	+ 0·45	5·2	− 14 50 30·6	+ 0·4
13	I.	14 37 9·54	+ 0·45	5·2	− 15 16 5·1	+ 0·9
14	I.	14 42 0·00	+ 0·43	5·2	− 15 41 17·1	+ 1·3

Date.	Right Ascension.			Declination.		
	Limb observed.	Right Ascension of Centre.	Difference from Nautical Almanac.	Parallax in Declination.	Declination of Centre.	Difference from Nautical Almanac.
1840.		h. m. s.	s.	"	° ' "	"
Oct. 19	I.	15 6 30·05	+ 0·29	+5·4	− 17 41 11·8	+ 4·3
20	I.	15 11 27·73	+ 0·26	5·4	− 18 3 57·1	+ 0·1
22	I.	15 21 26·93	+ 0·30	5·4	− 18 44 52·5	+ 2·0
24	I.	15 31 31·17	+ 0·38	5·5	− 19 29 51·6	+ 1·7
30	I.	16 2 13·55	+ 0·46	5·6	− 21 22 58·1	+ 0·1
Nov. 7	I.	16 44 13·63	+ 0·28	5·8	− 23 20 6·9	+ 3·9
11	I.	17 5 36·64	+ 0·32	5·9	− 24 2 53·7	− 0·1
12	...	....	....	5·9	− 24 11 48·0	+ 1·4
19	I.	17 48 53·21	+ 0·19	6·1	− 24 53 59·4	+ 0·4
20	I.	17 54 19·60	+ 0·26	6·1	− 24 57 3·9	− 0·5
24	I.	18 16 5·98	+ 0·31	6·2	− 25 1 44·0	+ 1·2
28	I.	18 37 49·98	− 0·15	6·3	− 24 54 27·2	− 6·3
30	I.	18 48 40·49	+ 0·33	6·4	− 24 46 8·9	− 1·0
Dec. 1	...	....	....	6·4	− 24 40 57·2	− 3·0
9	I.	19 36 50·45	+ 0·17	6·6	− 23 33 52·3	− 1·0
14	I.	20 3 0·54	+ 0·13	6·7	− 22 27 44·2	− 2·5
16	I.	20 13 19·23	− 0·43	6·7	− 21 57 5·6	− 2·5
18	I.	20 23 33·56	+ 0·08	6·8	− 21 23 59·4	− 4·4
21	I.	20 38 43·63	+ 0·08	......	....	....
22	I.	20 43 43·85	− 0·12	6·9	− 20 10 32·6	− 1·8
23	I.	20 48 42·98	+ 0·09	7·0	− 19 50 50·0	− 5·2
24	I.	20 53 40·39	+ 0·08	7·0	− 19 30 32·9	− 6·6
26	I.	21 3 30·52	− 0·03	7·0	− 18 48 20·3	− 5·4
29	I.	21 18 4·23	− 0·03	7·1	− 17 41 17·8	− 4·3

OBSERVED RIGHT ASCENSIONS AND DECLINATIONS OF MARS.

Date.	Right Ascension.			Declination.		
	Limb observed.	Right Ascension of Centre.	Difference from Nautical Almanac.	Parallax in Declination.	Declination of Centre.	Difference from Nautical Almanac.
1840.		h. m. s.	s.	"	° ' "	"
Nov. 16	II.	11 33 22·37	+ 0·19	+3·6	+ 4 40 59·1	− 4·2
17	......	....	....	3·6	+ 4 27 59·4	− 3·9
18	......	....	....	3·6	+ 4 14 59·3	− 5·2

OBSERVED RIGHT ASCENSIONS AND DECLINATIONS OF VESTA.

Date.	RIGHT ASCENSION.		DECLINATION.		
	Right Ascension.	Difference from Nautical Almanac.	Parallax in Declination.	Declination.	Difference from Nautical Almanac.
1840.	h. m. s.	s.	"	° ' "	"
May 2	16 6 26·63	− 4·29	……	………………	………
18	15 51 50·55	− 4·22	+6·8	− 10 25 33·0	− 3·6
20	15 49 50·97	− 4·45	6·8	− 10 25 29·3	− 1·5
21	15 48 51·47	− 4·22	…	………………	………
25	15 44 54·18	− 4·25	6·8	− 10 27 30·5	− 1·8
26	15 43 55·72	− 4·24	6·8	− 10 28 17·9	− 2·5
29	15 41 3·59	− 4·43	6·8	− 10 31 27·1	− 3·6
30	15 40 7·74	− 4·40	…	………………	………
June 2	15 37 25·77	− 4·13	6·8	− 10 37 31·5	− 2·5
3	15 36 33·75	− 4·14	…	………………	………
8	15 32 32·51	− 3·78	…	………………	………
10	15 31 5·14	− 4·24	…	………………	………
13	15 29 7·04	− 3·59	…	………………	………
14	15 28 30·22	− 4·08	…	………………	………
16	15 27 22·70	− 4·03	…	………………	………
17	15 26 51·51	− 4·01	…	………………	………
19	15 25 54·59	………	…	………………	………

OBSERVED RIGHT ASCENSIONS AND DECLINATIONS OF JUNO.

Date.	RIGHT ASCENSION.		DECLINATION.		
	Right Ascension.	Difference from Nautical Almanac.	Parallax in Declination.	Declination.	Difference from Nautical Almanac.
1840.	h. m. s.	s.	"	° ' "	"
Jan. 6	1 40 22·71	………	……	……………	………
16	……………	………	+4·3	−2 53 8·6	………
17	1 54 52·38	………	4·2	−2 42 32·2	………
22	2 2 6·35	………	…	……………	………
24	2 5 5·67	………	…	……………	………
25	2 6 36·80	………	…	……………	………
27	2 9 41·46	………	…	……………	………
29	2 12 49·36	………	…	……………	………

Date.	RIGHT ASCENSION.		DECLINATION.		
	Right Ascension.	Difference from Nautical Almanac.	Parallax in Declination.	Declination.	Difference from Nautical Almanac.
1840.	h. m. s.	s.	"	° ' "	"
June 16	18 57 7·61	− 8·45	......	....	....
19	18 54 49·29	− 8·30	......	....	....
20	18 54 2·00	− 8·41	......	....	....
23	18 51 37·86	− 8·38	......	....	....
July 13	18 35 16·63	− 8·67	+ 1·9	+ 21 33 10·7	− 5·3
15	18 33 44·48	− 8·63	1·9	+ 21 20 59·9	− 6·8
24	18 27 22·35	− 8·40	1·9	+ 20 34 41·3	− 9·7
30	....	....	1·9	+ 19 21 9·7	− 11·0
Aug. 1	....	....	1·9	+ 19 1 52·6	− 13·4
5	....	....	1·9	+ 18 21 36·8	....
6	....	....	1·9	+ 18 11 8·9	....
8	....	....	2·0	+ 17 49 57·2	....

OBSERVED RIGHT ASCENSIONS AND DECLINATIONS OF JUPITER.

Date.	RIGHT ASCENSION.			DECLINATION.		
	Limb observed.	Right Ascension of Centre.	Difference from Nautical Almanac.	Parallax in Declination.	Declination of Centre.	Difference from Nautical Almanac.
1840.		h. m. s.	s.	"	° ' "	"
Jan. 26	I. & II.	14 58 16·11	+ 0·46	...	....	....
April 18	I. & II.	14 54 58·58	+ 0·42	+ 1·8	− 15 18 10·2	+ 1·1
21	I. & II.	14 53 34·06	+ 0·36	...	....	....
22	I. & II.	14 53 5·24	+ 0·24	1·9	− 15 10 56·1	− 0·1
23	I. & II.	14 52 36·57	+ 0·52	...	....	....
24	I. & II.	14 52 7·30	+ 0·41	1·9	− 15 6 39·3	+ 2·8
25	I. & II.	14 51 38·04	+ 0·51	1·9	− 15 4 33·9	− 0·1
27	I. & II.	14 50 38·83	+ 0·55	1·9	− 15 0 11·6	+ 3·4
28	I. & II.	14 50 8·80	+ 0·38	1·9	− 14 58 1·9	+ 2·6
29	I. & II.	14 49 38·91	+ 0·45	...	....	....
May 1	I. & II.	14 48 38·76	+ 0·51	1·9	− 14 51 29·2	+ 1·4
2	I. & II.	14 48 8·32	+ 0·26	1·9	− 14 48 15·5	+ 3·4
20	I. & II.	14 39 20·25	+ 0·37	1·8	− 14 11 3·2	+ 0·9
21	I. & II.	14 38 53·00	+ 0·40	...	....	....
22	II.	14 38 25·93	+ 0·27	...	....	....
25	I. & II.	14 38 7·47	+ 0·43	1·8	− 14 1 32·0	+ 1·3
26	I. & II.	14 36 41·89	+ 0·27	1·8	− 13 59 43·2	+ 1·6
28	I. & II.	14 35 52·33	+ 0·26	...	....	....
29	I. & II.	14 35 28·44	+ 0·47	...	....	....
30	I. & II.	14 35 4·66	+ 0·33	...	....	....
June 2	I. & II.	14 33 56·72	+ 0·31	1·8	− 13 48 3·8	+ 2·9
3	I. & II.	14 33 35·10	+ 0·30	...	....	....
8	I. & II.	14 31 55·25	+ 0·20	...	....	....
10	I. & II.	14 31 19·39	+ 0·18	...	....	....
13	I. & II.	14 30 30·41	+ 0·40	...	....	....
18	I. & II.	14 29 20·90	+ 0·23	...	....	....
19	I. & II.	14 29 8·96	+ 0·21	...	....	....
22	I. & II.	14 28 37·18	+ 0·19	...	....	....
30	I. & II.	14 27 42·76	+ 0·35	...	....	....
July 6	I. & II.	14 27 31·27	+ 0·25	...	....	....

Date.	Right Ascension.			Declination.		
	Limb observed.	Right Ascension of Centre.	Difference from Nautical Almanac.	Parallax in Declination.	Declination of Centre.	Difference from Nautical Almanac.
1840.		h. m. s.	s.	"	° ′ "	"
May 26	I. & II.	17 14 28·78	+ 0·58	+0·9	− 21 29 17·5	+ 15·5
28	I. & II.	17 13 52·36	+ 0·55	0·9	− 21 28 39·0	+ 17·5
29	I. & II.	17 13 33·90	+ 0·46	0·9	− 21 28 23·2	+ 15·0
30	I. & II.	17 13 15·22	+ 0·24	0·9	− 21 28 4·8	+ 15·0
June 2	I. & II.	17 12 19·54	+ 0·47	0·9	− 21 27 10·1	+ 14·3
3	I. & II.	17 12 0·94	+ 0·63	0·9	− 21 26 48·0	+ 18·0
10	I. & II.	17 9 48·64	+ 0·52	...	....	....
16	I. & II.	17 7 55·88	+ 0·47	...	....	....
17	I. & II.	17 7 37·33	+ 0·50	...	....	....
19	I. & II.	17 7 0·47	+ 0·57	...	....	....
28	I. & II.	17 4 20·08	+ 0·51	...	....	....
30	I. & II.	17 3 46·18	+ 0·49	0·9	− 21 19 0·2	+ 18·1
July 13	....	....	....	0·9	− 21 16 21·6	+ 16·1
16	I. & II.	16 59 48·32	+ 0·26	0·9	− 21 15 56·0	+ 14·7
17	I. & II.	16 59 35·90	+ 0·36	0·9	− 21 15 48·4	+ 14·2
29	I. & II.	16 57 31·40	+ 0·30	0·9	− 21 14 51·5	+ 16·7
Aug. 4	I. & II.	16 56 48·82	+ 0·46	...	....	....

OBSERVED RIGHT ASCENSIONS AND DECLINATIONS OF URANUS.

Date.	Right Ascension.		Declination.		
	Right Ascension.	Difference from Nautical Almanac.	Parallax in Declination.	Declination.	Difference from Nautical Almanac.
1840.	h. m. s.	s.	"	° ′ "	"
Jan. 2	22 59 15·69	− 4·76	...	....	....
Aug. 31	23 20 3·25	− 5·65	+ 0·3	− 5 11 2·1	− 23·8
Sept. 1	23 19 54·60	− 5·63	0·3	− 5 12 0·4	− 26·4
2	23 19 45·77	− 5·75	0·3	− 5 12 54·8	− 25·0
3	23 19 37·35	− 5·44	0·3	− 5 13 49·8	− 24·1
4	23 19 28·52	− 5·50	0·3	− 5 14 46·0	− 24·3
5	23 19 19·57	− 5·66	...	....	....
7	....	....	0·3	− 5 17 35·6	− 25·3
9	23 18 44·23	− 5·69	0·3	− 5 19 28·3	− 25·6
10	23 18 35·33	− 5·73	0·3	− 5 20 23·1	− 24·2
12	23 18 17·64	− 5·71	0·3	− 5 22 14·6	− 23·4
17	23 17 33·30	− 5·92	0·3	− 5 26 53·4	− 23·5
25	23 16 24·04	− 5·97	...	....	....
26	23 16 15·75	− 5·80	...	....	....
29	23 15 50·82	− 5·71	...	....	....
30	23 15 42·79	− 5·54	...	....	....
Oct. 1	23 15 34·53	− 5·67	...	....	....
2	23 15 26·47	− 5·68	0·4	− 5 40 8·7	−24·6
7	23 14 47·24	− 5·89	0·4	− 5 44 7·8	−22·9
8	23 14 39·76	− 5·83	...	....	....

Date.	Right Ascension.		Declination.		
	Right Ascension.	Difference from Nautical Almanac.	Parallax in Declination.	Declination.	Difference from Nautical Almanac.
1840.	h. m. s.	s.	"	° ′ "	"
Oct. 9	23 14 32·54	− 5·61	+0·4	− 5 45 40·3	− 23·4
10	23 14 25·24	− 5·58	...	....	....
12	23 14 10·78	− 5·67	0·4	− 5 47 52·7	− 23·0
14	23 13 56·72	− 5·80	0·4	− 5 49 16·2	− 21·7
19	....	....	0·4	− 5 52 36·5	− 23·8
22	23 13 6·19	− 5·48	0·4	− 5 44 24·0	− 22·6
24	23 12 54·76	− 5·52	0·4	− 5 55 33·4	− 24·0
27	23 12 38·78	− 5·52	0·4	− 5 57 7·3	− 23·3
30	23 12 24·24	− 5·43	0·4	− 5 58 33·6	− 23·9
Nov. 5	23 11 59·25	− 5·49	0·4	− 6 0 56·3	− 22·9
6	23 11 55·62	− 5·54	...	....	....
7	23 11 52·52	− 5·23	...	....	....
10	23 11 43·24	− 5·31	...	....	....
20	23 11 24·11	− 5·38	...	....	....
26	23 11 21·57	− 5·38	...	....	....
27	23 11 21·72	− 5·46	...	....	....
30	23 11 23·56	− 5·48	...	....	....
Dec. 1	23 11 24·66	− 5·37	...	....	....
2	23 11 25·83	− 5·38	0·4	− 6 3 18·6	− 23·0
29	23 13 7·83	− 5·73	0·4	− 5 51 22·5	− 22·1

The Tables, pp. 140—153, contain comparisons of the Right Ascensions and Declinations of the Sun, Moon, and Planets, and of the Diameters of the Sun and Moon, deduced from the observations, with the values computed from the Nautical Almanac.

When both the limbs of the Sun or a Planet have been observed with the Transit Instrument, the Mean of their Right Ascensions is taken for the Right Ascension of the Centre.

When only one limb of the Sun or a Planet has been observed, the Right Ascension of the Centre has been determined by applying the semi-diameter in Right Ascension, taken from the Nautical Almanac.

The observed Right Ascensions of the Sun's and Planet's centres are compared with the values for the transits over the meridian of Edinburgh, computed from the Nautical Almanac.

From previous observations of the Moon's diameter, made with the Transit Instrument and Mural Circle, Professor HENDERSON found that the computed values, given in the Nautical Almanac, were too small. In reducing the observations of this year, the tabular semi-diameter in Right Ascension has been increased, as he recommended, by $\frac{1}{540}$ part, and in Declination by $\frac{1}{500}$ part. In Volume X. of the Memoirs of the Royal Astronomical Society, from a comparison of the Moon's declinations, observed at Greenwich, Cambridge, and the Cape of Good Hope, he also shewed that the Moon's parallaxes in BURCKHARDT's Tables, which are employed in the Nautical Almanac, should be increased in the proportion of 57′ 0″·5 to 57′ 1″·8. These corrections have been applied in comparing the observations of the Moon with the computations of the Nautical Almanac.

The observed Right Ascensions of the Moon's limbs are converted into observed Right Ascensions of the centre for the transit over the meridian by applying the times of the semi-diameter passing the meridian, taken from the Nautical Almanac, and increased by $\frac{1}{540}$ part, as mentioned above. The observed Right Ascensions of the centre are then compared with the values for the transits over the meridian of Edinburgh, computed from the list of Moon-culminating Stars in the Nautical Almanac.

The parallaxes in declination of the Sun, Moon, and Planets are computed on the supposition that the ratio of the Earth's axis is = 300 : 299, whence the reduced or geocentric latitude is 55° 46′ 43″, and the logarithm of the Earth's radius 9·999008. For the Moon, the rigorous formula is adopted, viz.:—

$$\text{sin parallax in declination} = \text{earth's radius} \times \text{sin (equatorial horizontal parallax + Airy's correction)} \times \text{sin } (55^\circ\ 46'\ 43'' - \text{apparent declination of limb.})$$

For the Sun and Planets, the small arcs were taken in place of their sines.

The horizontal parallaxes and semi-diameters were taken from the Almanac, the values for the Moon being corrected as above.

The parallax and semi-diameter in declination being applied, according to their signs (the sign of the semi-diameter being + for an observation of the South Limb, and − for an observation of the North), to the apparent declination of the Sun or Planet, given in the last column of the observations, the result is the geocentric declination of the centre deduced from observation.

The observations of Declination of the Moon's limbs that were not fully enlightened have been corrected for the defect of illumination by the quantities mentioned in the notes.

The Declinations of the centres of the Sun and Planets for the Transits over the meridian of Edinburgh have been computed from the Nautical Almanac; and of the Moon, from the list of Moon-culminating Stars in the same work.

The signs prefixed to the differences from the Nautical Almanac, or the differences between the observed and computed places, indicate the manner in which the differences are to be applied to the computed or tabular places to obtain the observed.

Date.	Time by Transit-Clock.	True Sidereal Time.	Object.	Phenomenon.
1840.	h. m. s.	h. m. s.		
Mar. 8	7 45 2·1	7 45 54·6	⁎ 7·8^{m}, 10° from Moon's vertex (true) to the right: App. pos. = R.A. 3^{h} 5^{m} 2^{s}; D. + 22° 21′	Immersion at dark limb
9	7 3 27·1	7 4 20·0	⁎ 7·8^{m}, 20° from Moon's vertex (true) to the left: App. pos. = R.A. 4^{h} 4^{m} 57^{s}; D. + 25° 49′	Immersion at dark limb
Oct. 13	0 48 22·6	0 48 3·7	19 Pleiadum	Immersion at bright limb
Nov. 30	22 34 39·3	22 34 7·9	44 Capricorni	Immersion at dark limb

Observed by Professor HENDERSON with the Equatorial Telescope, having a magnifying power of 110.

OBSERVED ECLIPSE OF JUPITER'S SATELLITE.

Date.	Time by Transit-Clock.	True Sidereal Time.	Satellite.	Phenomenon.	Difference from Nautical Almanac.
1840.	h. m. s.	h. m. s.			s.
Apr. 24	13 54 3·3	13 54 54·8	II.	Immersion	+ 51·2

Observed by Professor HENDERSON with the Equatorial Telescope, having a magnifying power of 110.

PRINTED BY NEILL AND COMPANY, EDINBURGH.

REPORT

TO

THE PRINCIPAL SECRETARY OF STATE FOR THE HOME DEPARTMENT,

ON THE

ROYAL OBSERVATORY OF EDINBURGH.

Sir,

I have the honour of forwarding, agreeably with my instructions, a copy of the Observations made in this Establishment from January 1 to June 30, 1846; they are much fewer than I could wish, but for the following reasons:—

On my arrival here, in the beginning of the present year, the calculations appeared greatly in arrear. The last volume published, contained the results for 1839; since which time, the great number of upwards of 30,000 observations had been made; part with the Mural Circle, by the late active Astronomer, Professor Henderson, to within a few days of his lamented decease, in November 1844; and part with the Transit Instrument by the Assistant-astronomer, Mr Alexander Wallace.

The Transit Observations, from January 1, to October 14, 1840, had been completely reduced by the late Astronomer, and had been printed up to October 3. The Instrumental Corrections had been obtained likewise by him to November 28. The remainder of the observations for that year had been carried, by the Assistant, up to the point of getting the Apparent Right Ascensions. He had likewise been engaged, since the late Professor's death, in computing the small corrections of the stars' apparent places, for all the subsequent observations, both with the Mural Circle and the Transit Instrument, up to the end of 1845; and completed this work in March 1846; otherwise, and excepting the means of the microscopes, and wires, where the whole five had been observed, the observations were wholly unreduced.

But as they appeared, on examination, to be all extremely good, to have been made on an excellent system, and all the records of the most minute circumstances which might probably affect the state of the instruments or the value of the results, having been preserved; the reduction of the observations was not only possible to be made, but in as complete a manner as if it had been done by the observer himself.

To attempt to make more observations, reduce them, and at the same time, bring up these long arrears of my predecessor, appeared, from the results of his ten years' experience, to be beyond the power of two persons; or, if tried, would certainly delay, to a long and distant period, the appearance of the results of Professor HENDERSON's work, for which many calls have been already made by various parties. As there exist such large arrears of calculations, it is but proper to premise, to prevent the possibility of being misunderstood, that, so far from any blame on that or any other account attaching to the late eminent individual who filled the post of Astronomer-Royal for Scotland, it is, on the contrary, wonderful, how, with his small means, he was able to accomplish so much; especially as he met at first with much official difficulty in printing the results of his observations.

The question, then, in the Observatory, as at present constituted, with a force of one assistant, became, Whether it would be better to stop the series of observations for a time, and apply wholly to the reduction of those already made? Or, neglecting them, to begin fresh observations,—reducing and publishing these new determinations? In either case a gap would be made in the series of astronomical researches; for such as were left uncalculated and unprinted, being in that state quite unavailable for any useful scientific purpose, might just as well not have been made; and even if published eventually, the greater part of the benefit to be derived from them, might, in the meanwhile, be lost.

I did not hesitate in choosing the former course; for, as the observations had already been actually made, to reduce those,—rather than make others, and then calculate them,—seemed to be, at the least, the more economical proceeding; and the one most proper to be pursued, with a due regard to applying the Government funds to their intended object, in the manner best adapted to obtain the greatest amount of advantage. This appeared to be the course required by my official duty, and to be the one most useful to science, more especially considering the importance of publishing the results of the late Professor's observations as soon as possible after the appearance of the phenomena: and the propriety of paying to the labours of the deceased, this mark of respect and esteem which his memory unquestionably deserves.

The system of observation, therefore, commenced by Professor HENDERSON, was discontinued at the beginning of this year; and only such stars have been observed since as are necessary for knowing exactly the Daily Error of the Clock, and the adjustments of the Transit Instrument; together with the moon and the stars culminating near her; having a special aim to make this series as perfect as possible in the case of the 2d Limb, since the former deficiency of such had been a matter of regret in the determination of the longitudes of several important points on the earth's surface.

It would undoubtedly have been desirable to have avoided thus interrupting the established system of observation; but, with the Observatory as at present constituted, a gap must have occurred somewhere, or the arrears of calculations must have been allowed to accumulate continually at the rate of almost 50 per cent. And perhaps the break has now taken place at the least disadvantageous time: for, considering the rapid progress made in Astronomy during the last twelve years, as well as the increase in the number of Observatories, and the greater degree of method and combination now introduced into their working,—I hardly think that the late Astronomer, had he commenced his career in 1846, would have proposed to himself exactly the same class of observations which he took up in 1834; and I could not, therefore, feel altogether justified in continuing them, when, after having got through the work already mentioned, I hope to resume the active use of the instruments.

There is, assuredly, great impropriety in altering, for any but the gravest and most important reasons, the particular aim and character once given to any public institutions, especially Astronomical ones; or causing them to reflect merely the passing ideas and notions of the moment, in place of the general state and steady march of science; instead of making them the connecting link between the past and the present; the enduring string on which the successive pearls of philosophical research are strung, connected and preserved, and made conducive to the discovery of more.

Deeply impressed with the wariness to be practised in making any such change,—having the highest respect for the talent of the late Professor HENDERSON, who established the present system in this Observatory,—and fully appreciating his admirable knowledge of, and deep acquaintance with, the state of Astronomical science throughout the world in his time; fully resolved, also, to employ the Establishment, to the direction of which I have had the honour of being appointed, not to carry out any particular views of my own, but rather to serve, as far as may be possible, the interests of the general body of Astronomers,—by taking up one of those classes of observation, which are too extensive to be compassed by private individuals, and require too long a period of time for their accomplishment, to be achieved in one man's lifetime: Imbued, then, with these views, I am not so sorry for the present temporary stoppage of the observations,—inasmuch as an opportunity is thereby afforded for gathering the opinions of scientific men on this important question: and no change will be attempted to be made in the system of observing in this Institution, but such as, in the opinion of Astronomers in general, will be attended with benefit to the interests of the science.

Meanwhile the Transit and Mural Circle Observations for 1840 have been completely reduced, and all the manuscript for that volume has been prepared. To guard against errors, the greater part of the computations have been done in duplicate. The printers, who have reached the 104th page, as may be seen from the accompanying proof-sheets, are advancing at the rate of about 12 pages a-week; and the volume may be expected to be ready for distribution towards the close of next month.

The calculation of the Transit Observations for 1841 has been commenced: the intervals of the wires have been obtained, and all the means gone over twice. The same with the small corrections for the apparent places of all the stars; and the tabular Right Ascensions of the standard stars. The errors in Level and Collimation throughout the year have been obtained, and applied to all the observations.

I have further to report that the True Time is daily given to the public, by notifying, on the window of one of the outbuildings, the error of a clock inside, whose face can be seen from without. This is, however, a very inconvenient and comparatively inefficient plan; for every individual person who wishes to obtain a correct knowledge of the time, must each send a person up the hill with a chronometer, and serious changes in the rate of a portable time-piece may occur in the long journeys which those who are connected with the shipping are thus daily obliged to perform. Various complaints of this nature have reached me from the captains of ships in Leith Docks and Roads, and from the chronometer-makers of Edinburgh and Leith; and it has been proposed to erect, close to the Observatory, a signal-ball similar to that in use at the Greenwich Observatory; so that by this means the time might be, as it were, published daily to the city, the port, and the surrounding country.

With regard to this proposition, I beg leave to remark, that, as it would certainly prove a great public benefit, and would probably be attended with little more expenditure of time to the Observatory officers than the present imperfect plan; there seems no reason, save the want of the necessary funds for the erection of the machinery, why the proposition should not be adopted at once.

Soon after my arrival here, I examined and took an account, with the assistance of an inventory drawn up by Professor HENDERSON, of all the moveable property in the Observatory; as well that purchased by Government, as that belonging to the Astronomical Institution, and placed under the charge of the Astronomer. Everything was identified, except two minor instruments belonging to the Astronomical Institution; but they were, I am informed by some of the Members, nearly worthless, and are not remembered to have been seen for some years.

The Observatory received a large accession of important works last year, through the active intervention of Professor J. D. FORBES; who, on the sale of the late Professor HENDERSON's extensive astronomical library, memorialised the Lord Advocate on the admirable opportunity thereby afforded of improving the small collection at the Observatory; and with the funds, which were immediately and liberally supplied by his Lordship, procured 260 volumes of standard scientific works; all carefully chosen and well adapted to complete our professional department; and they were obtained at a far less price than could have been expected to be done elsewhere, even had the works been procurable at all, for some were very rare. A considerable number of publications have also been presented to the Observatory in the course of this year, by various learned societies and private individuals, and are detailed below.

Of the three principal instruments, the Transit Instrument, the Mural Circle, and the Sheepshanks Equatorial,—the first seemed in nearly as perfect a condition as when first mounted. But the second exhibited, all over the surface of those parts which were of *wrought* metal, especially the spokes of the circle, a multitude of fine striæ; which proved, on close examination, to be embryo cracks in the brass, induced apparently in a great measure by the action of the atmosphere. On the instrument being drawn out from its pier, the spokes, which are formed of sheet-brass, turned up into a tube, were found to be much corroded along the line of the soldering; and three indeed had actually given way there, having the appearance of being split up lengthways, the crevice gaping open in one instance ·05 of an inch. The sprung spokes have been bound round tightly with copper-wire, which was afterwards to fix it, painted over with stiff white-lead. The edges of the brass appeared, by this means, to be brought close together, and the spokes rendered almost as firm as before. It will be necessary to examine the divisions on the limb, to see if any alteration has taken place in their value since they were examined in 1834; but if any should be found, it will probably apply only to future observations; as it seems certain that this splitting of the spokes took place subsequent to the last observations made by Professor Henderson.

The whole circle, except the rubbing parts and the divided rim, has been painted over, to prevent the further action of the atmosphere; and the same has been done with the Sheepshanks Equatorial, in which symptoms of cracking and breaking up of the *wrought* brass tube had already appeared.

The building being much in want of rather extensive repairs, I applied to the architect of it, Mr Playfair, to examine the structure, and report upon its condition and requirements. The result, he stated, of his examination, made by his chief clerk, accompanied by a carpenter and plumber, was,—that the Observatory had been allowed to get into such a state of disrepair, that he intimated, after careful measurement of the essential work, about L.465 would be required to put the whole in as good a state as when delivered up by him on its completion. Since that time, a period of twenty years, the interior of the building had not been painted; and many leaks subsequently formed in the roof, have for a long time been sapping the beams, the ceiling, and the walls. To the quantity of water that comes into the observing-room after every shower of rain, may, perhaps, in a considerable degree, be attributed the rapid decay of the Mural Circle; the meridian windows being particularly leaky, and the woodwork of the walls there in several parts quite rotten. Indeed, on the whole, and as the leaks have of late been increasing, it may be dangerous to the roof and other parts of this really admirable building, if it is allowed to pass one more winter unrepaired.

And as the series of observations is now temporarily stopped, for the reasons mentioned in the beginning of this Report, an admirable opportunity is now offered, and one which, it is hoped, will never occur again,—to perform these necessary repairs in a thorough and final manner; and if once done, a very small yearly sum, the architect states, will afterwards suffice to keep all right.

An allowance of L.100 a-year was liberally granted by Government, in 1834, to defray the incidental expenses and ordinary repairs of the Establishment; but, from the experience of ten years, it has been found, that when the lighting, cleaning, the repairs to the instruments, and the necessary expenses for stationery and other matters essential to the carrying on of the business, have been defrayed;—there remains of the grant, over and above these, a sum by no means sufficient for keeping so large a building in perfect repair.

The whole of the money, however, in the year 1844, was not devoted to Observatory or public purposes.—The grant is made payable to the Astronomer for the time being, and he is not *required* to render any account of the disposal of it; but, with his usual high sense of honour, and his scrupulous honesty, Professor HENDERSON kept, in a ledger at the Observatory, a detailed account of the expenditure of every farthing of this grant, and carefully preserved all the bills as vouchers. Whenever, at the end of one year, any of the grant remained over and above the expenditure, he invariably carried that surplus to the account of the next year. But at his sudden and unexpected death, in November 1844, his accounts were left incomplete and unbalanced. His executor then stepped in, took the surplus of the grant, up to June 1844, as it appeared in the Observatory ledger, amounting to L.75 : 14 : 4; drew from the Exchequer, in the deceased's name, L.39 : 13 : 5, the proportional part of the grant for the period from July 1, to November 23, 1844, the day of the demise, and applied the whole, or L.115 : 7 : 9, after payment of some Observatory bills, to the private estate of the deceased.

As the money in question appeared to me, on entering on my official duties, to be strictly Government money, granted for a public purpose; and as the Observatory, in its disrepair, was then so notoriously in need of every available shilling; I went immediately to the executor, to explain my views of the case, and to request that the Observatory bills, which he had paid, should be sent up to the Observatory, to be preserved as vouchers, and the remainder of the money paid into the banking account of that Establishment.

He refused, however, to do either one or the other, alleging that he had legal reasons on his side for what he had done; that the Astronomer's salary being so small, this grant was intended to increase it; by allowing him, if he could light, clean, and ordinary repair the Observatory in any one year for less than L.100, to take the difference to himself; and he was not required to give any account of the manner in which the money was laid out. The executor considered that the salary of the Astronomer-Royal for Scotland was to be described as being L.300

a-year, and L.100 per annum, to light, clean, and perform the ordinary repairs on the Observatory.

But the grant in question was given in consequence of the application of the Members of the Astronomical Institution; and several of the Members have assured me,—that, whatever was their opinion as to the sufficiency of the Astronomer's salary,—they applied for that grant solely for the public purposes of the Observatory. Such are only mentioned in the Warrant, and in my own late appointment, where my salary is stated and defined, there is no allusion to this same grant. So that I see no ground whatever on which any of the money can be applied to the Astronomer's private purse; and, even if the executor's view could be made out, no scientific man should or would avail himself of a doubt, which might throw in his way a golden temptation to perform his official duties imperfectly. Certainly Professor HENDERSON did not do so through the whole of his career; but always, as far as in him lay, strengthened the powerful claim which men of science can so universally prefer when petitioning Government: namely, the upright and virtuous disposal of all those funds, large or small, that have been previously granted them to carry on their researches. In the matter of the accounts, too, even if none were to be actually *required* by Government, still every Astronomer would surely follow the admirable example of the late eminent individual; and for his own satisfaction, as well as the honour of the Observatory committed to his charge, he would keep in that Establishment a complete account of the disposal of all the Government money which had passed through his hands.

The annexed correspondence contains further particulars of this affair, the stirring of which has been most distasteful to me, inasmuch as Professor HENDERSON's name is thereby undeservedly mixed up with an action to which his principles and practice throughout life were completely opposed. But having tried in vain all private negotiation, there is nothing now left for me but to report the matter, as I do hereby.

To return to the now urgent repairs of the Observatory, as nothing effectual can be done without stripping all the lead from the roof, in order to discover the origin of the leaks, the small portion of the Government grant now in hand is not sufficient to enable the operations to be commenced in this sure and comprehensive manner; but the importance of doing it, and that very soon, before the winter season sets in, is unquestionable.

As the actual right of property of the building still rested with the Astronomical Institution, I wrote at an early period to the President, to inform him of the state of the fabric. He collected the Members together, laid the case before them; and, after several meetings, they came to the conclusion, that, their own funds being exhausted, and the partial surrender of the Observatory to Government having been attended with excellent results to the purposes for which they had erected the establishment; it would be better to divest themselves entirely of the property, on which they had actually spent several thousand pounds, if, by presenting it to Government, there appeared a greater probability of the building being always upheld as an active Astronomical Observatory.

The particulars of this offer are contained in the accompanying Memorial of the Astronomical Institution; and it behoves me to say, that though, from certain accidental occurrences, the repairs necessary to the Observatory form at present so prominent a feature, yet the fabric is comparatively new, it is built of solid stone, is massive in structure, and handsome in architectural appearance; and while, from this cause, it may be reckoned one of the ornaments of a city abounding with classical edifices,—it presents internally a signal specimen of excellent civil-engineering, in the vital part of the whole, namely, the foundations of the instrument-piers: which are perhaps firmer than those of any other Observatory in the kingdom, thanks to the skill (honorarily bestowed) of Mr Jardine, C. E., and to the trap-rock of which the hill is composed. From all this, it will be readily understood, that in their wish to promote the future welfare of the Observatory, the Members of the Astronomical Institution are really submitting to a great sacrifice, in offering thus to divest themselves of all right of property in the magnificent Observatory which they so recently erected; and, if there is much difficulty now in collecting fresh subscriptions in their Society to repair the structure; it is in a great measure because many of the gentlemen were under the impression that the Government had undertaken the complete support of the Observatory in every way; and finding too, year after year, from the excellent work continually produced by the late Professor HENDERSON, the Astronomer appointed by Government, that all supervision was absolutely needless,—they considered their scientific scheme to be fairly as well as hopefully established, and their immediate attention and patronage was then drawn to other rising institutions and plans of public benefit, from which they could not now well, or even possibly, be withdrawn.

It is to be remarked also, that from the admirable manner in which the late Professor HENDERSON directed the Observatory, the Members of the Astronomical Institution were induced to add soon after to what they had stipulated to appropriate to the use of the Government nominees, their Popular Observatory; to serve, under certain regulations, as the dwelling-house of the Assistant-astronomer, Mr A. WALLACE, of whom I beg to say, in conclusion, that, as well in the time preceding my arrival, as subsequent to it, he has acquitted himself with great zeal and untiring perseverance, both in the observations and the calculations, and has performed his duties ably and conscientiously under all circumstances.

I have the honour to be,

SIR,

Your most obedient, humble Servant,

C. PIAZZI SMYTH,

Astronomer-Royal for Scotland.

ROYAL OBSERVATORY, EDINBURGH,
30th September 1846.

APPENDIX.

Unto the Right Honourable the LORDS COMMISSIONERS of HER MAJESTY'S TREASURY, the Memorial of the Royal Astronomical Institution of Edinburgh.

In soliciting the attention of your Lordships to the present situation of the Royal Astronomical Institution of Edinburgh, it will not be necessary to enter minutely into the origin and history of that Association. From the existing arrangements between it and the Government, it must be sufficiently known, that, having had for its main object the establishment of an Astronomical Observatory for the purpose of regular scientific observations, the founders of the Institution had improvidently relied on the original subscriptions of the Members, without securing the means of increasing that original fund by such future contributions as the exigencies of the scheme might require. Under a too sanguine confidence in the popularity of the undertaking, and of the probable accession to the pecuniary resources of the Institution which the high objects aimed at, and the well-known character of the distinguished individuals by whom it was promoted and conducted, seemed fairly to warrant; the expenditure, in erecting the Observatory, and on other necessary purposes, very rapidly exhausted the whole of the original subscriptions,—and every attempt to obtain a permanent annual revenue from the voluntary assessment of the Members, proved in a great measure ineffectual. It was in these circumstances that the first appeal in behalf of this Institution was made to Government in the year 1830; and, in the first instance, a grant of Two Thousand Pounds was obtained for the purchase of Astronomical Instruments. At a later period (in 1834), a still more effectual measure for accomplishing the objects of the Institution was successfully brought about by the amalgamation of the Regius Professorship of Astronomy in the University of Edinburgh with the office of Principal Observer of the Royal Astronomical Institution. It is scarcely necessary to remind your Lordships that, under the arrangements now alluded to, the Members of the Institution, adopting the Regius Professor as their Observer, agreed to give him the sole and exclusive use of their Scientific Observatory; while, on the other part, the Government granted to the Professor an increased salary of Three Hundred Pounds, with a further allowance of One Hundred Pounds a-year, as the salary of an Assistant Observer, and of One Hundred Pounds a-year to defray the ordinary expenses of keeping and cleaning the different buildings. In these arrangements no special provision was made for the future maintenance of the Observatory when extraordinary and costly repairs might become absolutely necessary; and as the property of the Observatory and its connected buildings remains vested in the Members of the Institution, it might in strictness be inferred that their appropriation of it to the sole use of the Regius Professor and Astronomer-Royal might not entirely relieve them from the burden of maintaining the fabric. To this important point the attention of the Members has been forcibly called, by the discovery that the roof of the Observatory, which is of a peculiar construction, is at present in a very perilous state; and that for this and some other repairs an expense of about Five Hundred Pounds has become immediately necessary. To meet this expense the Institution is not provided with any means whatever; and it has, unhappily, become the duty of the members to bring the matter under your Lordships' notice, and to make their earnest appeal for your effective interference. Among the Members of the Institution a diversity of opinion has prevailed as to the course to be followed in this emergency; but while a good many would rest contented with a special grant to meet the present difficulty, a majority have been of opinion that a permanent arrangement on the subject should now be aimed at. As the great ends of the original Association have now been attained, under the existing arrangements, in a manner exceeding their highest expectations, it has appeared to them that their continuance as a separate and independent body has at least become useless, if not rather positively inconvenient. Under these impressions, the Members of the Institution have now come to the deliberate resolution of tendering to the Government the entire property of the Observatory and its connected buildings, in which they are now vested, on some minor conditions, of a kind not likely to create any obstacle to the completion of such a transaction. As the motives and considerations which have influenced the Institution in making their present application cannot possibly be mistaken by your Lordships, it would seem very superfluous to recommend it to your attention and favour by any anxious argument. Neither do they deem it necessary at this stage to enter further into any technical details. In general, it may be proper and enough to state that the property in question is feudally holden under the Corporation of the City of Edinburgh, on condition of being employed for scientific purposes; that the Scientific Observatory, and the other connected buildings, have been erected and upheld by the Institution at an expense exceeding Five Thousand Pounds; and that, in the estimation of the most competent judges in such matters, the whole forms one of the most complete, though not the largest, establishment of the kind in these kingdoms. At present, the Memorialists only beg leave to add, that, if the contemplated arrangement should be effected, they would regard it as the hopeful prelude of a still more liberal patronage of this scientific establishment than it has ever yet received while it remained in their hands.

By order, and in name of the Committee of the Royal Astronomical Institution,

C. PIAZZI SMYTH, *Convener*.

EDINBURGH, 15*th September*, 1846.

MINUTES of the recent proceedings of the ASTRONOMICAL INSTITUTION of EDINBURGH.

To General Sir T. MAKDOUGALL BRISBANE of Brisbane, Baronet, President of the Astronomical Institution of Edinburgh.

EDINBURGH, 18*th May* 1846.

SIR,—We, whose names are undersigned, Proprietors of the Astronomical Institution of Edinburgh, understanding that, in the present condition of the buildings of the Observatory, a sum of nearly Five Hundred Pounds will be required to place them in a safe and sufficient state of repair, and that no effectual measures for that purpose can be adopted but by a General Meeting of the Proprietors and Subscribers, to be called by the President or Vice-President, for that special purpose, hereby request that you will be pleased to take the necessary steps for summoning such Meeting as soon as may be deemed convenient, when it is our purpose to suggest, as the most expedient course in the present circumstances, that the entire property of the Institution should be permanently resigned to the Crown, on such conditions as are calculated to secure the original and primary objects of that Association.—We have the honour to be, Sir, your most obedient humble Servants, G. S. MACKENZIE, THO. THOMSON, J. T. GIBSON-CRAIG, CARLYLE BELL, ROBT. BRYSON, A. MACDONALD, JAMES MACKAY, DAVID MACLAGAN, JNO. SMITH, *Master of Trinity House, Leith,* HAMILTON PYPER, JOHN RUSSELL, J. GIBSON THOMSON, J. S. MORE, ROBERT BALD, J. P. BERTRAM.

MAKERSTOUN, *May* 28, 1846.

In compliance with the above requisition, I hereby summon a General Meeting of the Proprietors and Subscribers of the Astronomical Institution, to hold on Wednesday, the 10th day of June, in Douglas's Hotel, St Andrew Square, at Three o'clock.

THO. MAKDOUGALL BRISBANE.

At an Extraordinary General Meeting of Proprietors and Subscribers, held within Douglas's Hotel, on Wednesday, 10th June 1846, in terms of the foregoing Requisition, and intimated by Circulars addressed to the Members by the Secretary,—

General Sir T. MAKDOUGALL BRISBANE, Bart., President, in the Chair;—

The requisition having been read, it was moved by Mr THOMAS THOMSON, seconded by Sir GEORGE S. MACKENZIE,—

"That, as the original and proper objects of this Association have been essentially obtained by the existing arrangements with Government, the permanence of these arrangements would be better secured and perpetuated by a transfer of the rights of the Institution into the hands of the Government, on the understanding and condition that the Observatory should in future be upheld by the public as a proper Royal Observatory, of which the Regius Professor of Astronomy in the University of Edinburgh shall be, in all time coming, the director and head: That a Committee of Members of the Institution be appointed, with power to enter into negotiations with Government for the purpose of carrying the above measure into effect; and that it shall be an instruction to the committee, that, among the conditions of the proposed transfer, the Edinburgh Observatory shall be an independent establishment: but that a body of Visitors shall be provided, in order to secure the faithful execution of the scientific objects in view."

The meeting having discussed the terms of the foregoing motion, and some Members having remarked that they had not sufficient information upon the history of the Institution, and its present state and future prospects, to enable them to arrive at a satisfactory conclusion, the motion was withdrawn.

It was then moved by Mr THOMSON, seconded by Mr RUSSELL, and unanimously resolved,—

"That the meeting, having had under their consideration the requisition addressed to the President, before any further resolution on the subject, nominate and appoint the following Members, viz., The President, Sir George S. Mackenzie, Professor Forbes, Professor Smyth, Mr Thomas Thomson, Mr J. T. Gibson-Craig, Mr John Russell, Mr Carlyle Bell, Mr Robert Bryson, Mr Walter Nichol, and Mr J. P. Bertram (Professor Smyth to be Convener), as a Committee for the purpose of preparing a Report on the subject of the proposed transfer of the property of the Association, to be printed and circulated among the Members, and taken into consideration at a general meeting to be held in this place on Thursday the 30th day of July next, at three o'clock, to which time the present meeting is accordingly adjourned. "THO. MAKDOUGALL BRISBANE, *Preses*."

At a Meeting of the Committee appointed by the foregoing Minute, held in the Observatory, on Wednesday, 24th June 1846,—

PRESENT,

All the Members of the Committee, with the exception of Mr RUSSELL.

Professor Smyth, the convener of the Committee, laid before the meeting a printed paper of Remarks on the Present State and Future Prospects of the Observatory, which he had framed from an examination of the records of the Institution, and also an estimate by Mr Playfair of the probable expense of repairing the Observatory building, amounting to L.465 : 7 : 2. After having considered these documents, the meeting (with the exception of Mr Nichol who dissented) resolved, upon the motion of Sir GEORGE MACKENZIE, seconded by Mr BRYSON, to adopt the following as their

REPORT.

The Committee, having had laid before them a printed statement by the Professor of Practical Astronomy, and having considered the history of the Astronomical Institution, as deduced in that statement from the regular minutes of that body; having also before them a statement by Mr Playfair of the probable expense of repairing the Observatory buildings, amounting altogether to L.465,—are of opinion, that there is but one alternative before the body of Proprietors, either to make over the property to Government, on conditions which shall appear most conducive to carry out the original intentions of the Subscribers, or to commence a fresh subscription for the purpose of completely repairing the buildings.

Considering the largeness of the sum required, the Committee are of opinion that it would be in vain to attempt to carry out the latter proposition, even could the tax on the Members be made compulsory, which is impossible. They, therefore, recommend to the body of Proprietors to make over their property to Government, under the following conditions :—

That the office of Astronomer-Royal for Scotland be ever hereafter associated with the Professorship of Practical Astronomy in the University of Edinburgh.

That the Astronomer be responsible solely to the department of Government by which he is appointed.

That it be recommended to Government that, in order to secure the permanent efficiency of the office, a board of official and other persons connected with Scotland be appointed, including those who have hitherto taken the most prominent interest in the proceedings of the Astronomical Institution, to constitute a Board of Visitors, similar to those acting at Greenwich and elsewhere, who shall annually make their report and suggestions to Government on the state of the Observatory.

The Secretary was instructed to circulate the foregoing Report, and the Professor's Statement referred to, along with the notices calling the adjourned general meeting, to be held on the 30th of July next. C. PIAZZI SMYTH, *Convener*.

Extracts from "Remarks on the Present State and Future Prospects of the Observatory of the Astronomical Institution of Edinburgh," above alluded to.

THE ASTRONOMICAL INSTITUTION was founded in 1811, by private subscription amongst the gentlemen of Edinburgh, with the intention of establishing,—

1*st*, A Scientific Observatory, where, with the very best procurable instruments, accurate observations should be instituted for the improvement of Astronomy.

2*d*, A Popular Observatory and a Physical Cabinet, where Members might, at any time, make observations and experiments in Astronomy or any other Science, with apparatus which they intended to place there: a very complete set of Meteorological Instruments was specially to be provided. "Such an Establishment will tend to remove," it was said, "an objection that has often been urged against the system of education in this University, and one that is particularly felt by those who are destined for the sea service, and by those Naval Officers (of whom there have of late been many) who endeavour to supply, at some interval of leisure, the want of early scientific instruction in the principles of their own Profession."

The following was the Address in which the proposers embodied their views, and came before the public:—"It is the character of the present age, that the sciences are all advancing together, and proceeding towards perfection, at a more uniform rate than they have done at any former period. It is not now as it was when one or two branches of knowledge were exclusively cultivated, and the rest entirely abandoned. Every science has, at present, a proper place allotted to it, and a share of talents, industry, and genius, employed in it, proportioned to its dignity and importance. As this is the case, in general, with the philosophy and literature of the present age, so it should be expected to hold of every individual College or Seminary dedicated to the cultivation of useful knowledge. In every such place we would expect to find provision made for instruction in all the sciences, so that no one should be left out, or be deprived of the attention and culture which, by universal consent, are acknowledged to be due to it. What, then, should we say, if, in a seminary illustrious for the success with which most of the sciences have been cultivated, we should find one which was left entirely without the support of an Institution essential to its prosperity? Our wonder would certainly be increased, when we found that the science so treated, for dignity and importance, occupied the highest place in physical knowledge.

"Astronomy is the science which we mean to speak of; and when we say that the University of Edinburgh has never had the benefit of an Observatory, it will be readily seen that the case we have supposed is by no means imaginary. Whatever care be taken to teach the mathematical and theoretical parts of this sublime science, the instructions never can be attended with complete success, if the art of observing and the use of instruments are not studied and exemplified at the same time; and an accurate notion thus communicated of the different paths by which the mind rises from the particular facts to the general conclusions of Astronomy.

"The want of instruction in that science will appear to be a great defect in an academical course, when we consider that induction from experience and observation is the great instrument for increasing all our knowledge, moral and political, as well as physical; and that the management of this philosophic apparatus is nowhere so well exemplified as in Astronomy; nowhere has it required so much skill in the application; nowhere has the progress from particulars to generals been so long and arduous; and nowhere have truth and certainty been at last so completely attained.

"We presume that nothing more than these general considerations can be required to shew the benefit that may be expected to arise to the science of this country by the Establishment of an Observatory in Edinburgh. Such an institution would remove a defect which has always been matter of regret with the friends of that University. It would add lustre to a system of scientific instruction that is, in many respects, so complete; and it is an advantage which may be said to be merited by the University, which was certainly the first in Britain, and we believe in Europe, to introduce the Astronomical discoveries of Newton into the system of public education.

" The importance of an Observatory to an Academical course of study is so generally acknowledged, that there is hardly any great Scientific Establishment from Madrid to Stockholm, where some Institution of this kind is not to be met with. There are two Observatories in England, and one in Ireland, and on the Continent not fewer than forty.

" It tends very much to add force to these considerations, that we are in the neighbourhood of a sea-port, the importance of which is continually increasing. The use of astronomical knowledge to the sailor is too well known to need to be enlarged on, and the institution we are all recommending is one that contributes the most immediately to the benefit of Navigation. We are not, therefore, recommending refined theories, or mere abstract speculations, but a science applicable to purposes of practical utility, and an art on which the lives and fortunes of multitudes continually depend. That an institution should be wanting, conducive to the perfection of an art, essential not only to the welfare of individuals, but to the prosperity and defence of the Kingdom, is a reproach that we hope needs only to be known in order to be removed.

" Actuated by these considerations, a number of gentlemen connected with the University and Royal Society of Edinburgh, together with many individuals desirous to diffuse knowledge, have resolved to submit to the public a plan, which, after long and attentive deliberation, seems to them fitted to embrace *the advancement of Science*, and *the improvement of Education*."

This combined scheme consisted of the Scientific Observatory, and the Popular Observatory and Physical Cabinet, mentioned above.

The Members of the Astronomical Institution, after well examining all the neighbourhood of Edinburgh, fixed on the Calton Hill, as the most proper place for establishing their Institution, and specially satisfied themselves that the spot was well suited to their primary object of a Scientific Observatory, by deputing Professors Playfair and Leslie, Dr Brewster, and Mr Jardine, to examine into and report upon this matter. The conclusion come to, after actual experiment and observation, was,—that the Hill was free from the injurious tremors to which it had been supposed to be liable,—that there were no appreciable undulations in the air caused by the heat of the chimneys of the town,—and that, on account of the elevation of the top of the Hill, an observer there would be above a great part of the thick smoke which might tend to obscure any celestial object and prejudice an observation made below.

The Members then applied to the Town-Council of Edinburgh for the old Gothic Tower on the Calton Hill, and some ground adjoining, that they might erect their Scientific Observatory, the Tower being proposed to be retained as the Popular Observatory. The Town-Council granted the request, on the condition, that should that Tower ever cease to be used as an Astronomical Observatory, then, both that building, and all other buildings which had been, or might be hereafter erected on the ground adjoining, should again revert to the Town-Council.

The Institution gave orders to Troughton to prepare some first-rate Astronomical Instruments for the Scientific Observatory about to be built, and brought some minor Instruments at once for the Popular Observatory in the Gothic Tower. Sir G. Mackenzie presented some valuable additions. Afterwards a Camera-Obscura was erected in the upper part of the building.

The Scientific Observatory, on the admirable designs of Mr W. H. Playfair, was soon commenced by the Society, and was almost completed when George IV. visited Edinburgh. The Members presented a loyal and congratulatory Address to His Majesty, who was pleased, in return, to grant them permission to call their Institution " The Royal Observatory of King George IV."

Professor Playfair and Sir G. Mackenzie were successively most active and able Presidents of the Institution; subsequently, Lord Napier admirably continued their exertions.

The Duke of Clarence, when Lord High Admiral, was made Patron of the Institution, on account of the intimate connection between Navigation and Astronomy, and the great assistance which the former was expected to receive from the establishment of a large Observatory in the Scottish capital.

The funds of the Institution having been expended on the buildings, the minor instruments, and the servants and exhibitors of the Camera,—the Government, in 1830, granted L.2000 for the purchase of Instruments for the Scientific Observatory; with this sum the Mural Circle, the Transit Instrument, and the Altitude and Azimuth Instrument, were procured.

A person to use these means regularly was still a desideratum; for although the Institution was very fortunate in having successively such men as Mr Jardine, C.E., and the late Professor Wallace, to fill the situation of "Observer," still their time was far too fully taken up with their more immediate professional occupations, to enable them to perform so perfectly as they could have wished, these additional and honorary duties. At length, in 1834, under the Presidentship of General Sir T. Makdougall Brisbane, Bart., the Institution made over to Government the unlimited use of the Scientific Observatory, on the condition that the Government would always keep a Salaried Astronomer and an Assistant-Astronomer there; the situation to be combined with the Professorship of Practical Astronomy in the University of Edinburgh. The Members preserved for themselves their Popular Observatory and Physical Cabinet, consisting of the Gothic Tower, and the small Transit-House attached, with all the minor Instruments purchased by the Institution. Under the arrangement, a salary of L.300 has been provided for the principal Observer, Professor of Practical Astronomy; an allowance of L.100 a-year, made to an Assistant Observer, and a further allowance of L.100 for the ordinary expenses of keeping and cleaning the different buildings.

The results of this agreement appear in 1846 to be, that the Scientific Observatory has produced in ten years, under the able direction of the late Professor Henderson, the Government Astronomer, about 60,000 Astronomical Observations. 30,000 of these have been reduced and published by him in five quarto volumes, and prove equal in accuracy, if not superior, to observations made in any other Observatory in any part of the world. They are most important and valuable observations, too, bearing on the very foundations of Astronomy. The remaining 30,000 are now in course of calculation, and printing by his successor, and promise to be equally valuable with the others.

The meetings of the Institution, subsequent to 1834, used to be held, for a time pretty regularly, in the Gothic Tower, but fell off by degrees, to December 1843; since which time there were none, until the 18th of May this year, when an extraordinary meeting was called by the President, in consequence of the Astronomer having reported to him that both the Scientific Observatory and the Popular Observatory were in a very bad state of repair, requiring an immediate outlay of nearly L.500.

The Government had allowed a sum for the incidental expenses and ordinary repairs of the former; but the case in question was one of extraordinary repairs, far above the sum allowed, and caused chiefly by comparatively small leaks in the roof, which not having been attended to, had for a long time been sapping both the beams and the walls.

The Institution had been much inconvenienced many years before, by a quantity of sheet-lead having been stolen from the roof of the Observatory by night. The same sort of theft was committed last year with the lead covering the small Transit House of the Popular Observatory, the burden of repairing which, belongs solely to the Astronomical Institution.

To meet such expenses at present, or such as may hereafter be required, there exist no means whatever at the command of the Institution. At a former period, a similar deficiency of means had occurred, and in the year 1831, a proposition was adopted by the Council, and even sanctioned by a General Meeting of the Proprietors, that an annual payment of Half-a-Guinea should be made by each Shareholder, by which an income of about L.100 a-year might have been secured. This, of course, could only be effected by the voluntary consent of each Proprietor, and much pains were taken by some individuals in their attempts to accomplish the object; but with what success may be learned from the fact appearing on the record, that the concurrence of not more than twenty-two members could be obtained, when, of course, the scheme was abandoned as hopeless. In these circumstances, the present situation of the Institution has become a very embarrassing one. Under the existing arrangements, the maintenance of the buildings in good repair rests on the Proprietors; nor can they, beyond the present allowance above alluded to, reasonably hope for any further aid from the Government. It has already, with extreme liberality, assisted the Astronomical Institution in carrying out its views, to an extent which, perhaps, no other private Society ever experienced in any country; and Government will not, and cannot, in comparative justice to other Scientific Associations, furnish any more funds. Those already bestowed are so large in amount, as to stamp at once the present and recent Ministries of the land as eminent fosterers and encouragers of science; and few, indeed, would have gone to the liberal extent which our Ministers have done, had not their minds been of high intellectual order, and true scientific cultivation. They have gone now as far as they well can go, and as far as they can fairly be asked to go, in favour of a private institution, whose Observatory has consequently been on a stationary footing ever since this well-directed endowment commenced; and during the last ten years of arduous pursuit and successful prosecution of science throughout the world.

In these circumstances, it appeared to the President, and some other Members, who take a deep interest in the prosperity of the Institution, that if the nominal and valueless right of property were relinquished to the Crown, and the whole Establishment consigned into the hands of Government, arrangements might be stipulated by which all the fundamental objects of the Association might be effectually and permanently secured.

As there had been no meeting of the Members since December 1843, there was great difficulty in taking their opinion; for there was no Council to call a meeting. Six of the Directors go out every year by rotation, and six more should be elected; but this not having been done in 1844 or 1845, there was no recognisable body of officers. In this dilemma the President and Sir George Mackenzie sent circulars to all the office-bearers elected in 1843, asking their opinion on the proposition of making over to Government the whole Observatory, on condition of its always being effectually kept up, and of the performance of the present needful repairs, for which the Astronomical Institution had no funds whatever. On a majority of answers having been received, all favourable,—a Special General Meeting of the Members was called in the Popular Observatory on the 18th of May, where they proceeded, in accordance with their laws, to sign a requisition to the President to call an Extraordinary General Meeting, to decide upon the subject. The President therefore called such a meeting on the 10th of June, but the generality of the Members who appeared there, complaining of being taken rather by surprise at the proposition,—and of not seeing distinctly the grounds of it; a Committee was appointed to prepare a detailed statement of the affair, and of the President's views upon it; and circulate the whole when printed amongst the Members.

Some of them appear unfortunately to be labouring under the erroneous notion, that, if the Establishment is given over as proposed, they will be totally and for ever excluded from it. Such an idea, we may very safely say, is far from being entertained either by the enlightened Government of the country, or by the persons appointed by it to the Observatory. The existence of a large mass of public feeling in favour of the cultivation of Astronomy, is the basis on which Government acts in drawing so largely on the public purse; and, as both the present Ministers and their predecessors have shewn themselves most anxious to increase the public establishments, to satisfy the greater demands of advancing science; they must be proportionately anxious that the public opinion, in favour of knowledge, should increase at the same rate. And it will be, therefore, always the interest, as well as the pleasure, of the Astronomer, to try, as far as in him lies, to make his science essentially popular. His first object will undoubtedly be to enable the Observatory committed to his charge to bear a respectable appearance in the scientific world; his second will be, that the people at large should be better acquainted with, and more interested in, the subject pursued. So that, while it would be dangerous to the first object, that any *right* of visiting should be given to the public at all hours, we may be quite sure that the Astronomer will be glad to introduce strangers at all convenient seasons. So far is Government, however, from wishing to close up its Observatories, and conceal their proceedings, that a large sum is furnished annually for printing the Observations, and distributing them gratis amongst all the scientific men in the world. While, to enable persons at a distance, as well as those in the immediate neighbourhood, to make themselves intimately acquainted with the whole course of affairs, the great additional expense is willingly incurred by Government, of publishing both the Observations and the Calculations in so complete a form, that anything and everything which may influence the original readings, or the subsequent results,—all the *experiences*, in fact, of the observers themselves, may be found in the book.

Thus, by the President's proposal, the Members will be saved from a burdensome tax on a property which at present yields them no pecuniary advantage; nor is likely so to do, and hardly any other actual, tangible, or appreciated one; so that little is lost by a change, which may, at the same time, bring many prospective advantages to the original objects of the Institution, and which seem only obtainable in this manner.

Of such we may enumerate—

1*st*, That, independent of the tax on Members for keeping their property in repair,—yet, having given up to Government the unlimited use of the Observatory, as long as it shall be actively sustained on a working establishment,—they have not reserved to themselves any right or power to enter the building at any time, for the purpose of judging whether Government is performing honestly and perfectly its part of the contract. With such an eminent individual as lately filled the situation of Astronomer, such inspection would have been quite a work of supererogation, and it is to be hoped that it may always prove so; but it is, nevertheless, a wholesome principle in a constitutional country to make the proceedings of every office, however insignificant, open to public inspection, and directly responsible to competent judges.

2*d*, Some mode of publishing correct time is greatly desired for the benefit of the shipping in the Roads, for the chronometer-makers of Edinburgh and Leith, and for the city itself, where railroads are increasing so fast; and the importance of having universally the correct time is becoming more and more appreciated, and more and more necessary even for the common purposes of life.

The plan at present adopted, is to notify daily on the window of the small Transit-house, the error of a clock inside, whose face can be seen by a person outside. But this is a very inconvenient and inefficient method; for every single person who wishes to get a knowledge of the time, must each send a man with a chronometer up the hill, and serious changes of rate in the portable time-piece may occur during its carriage backwards and forwards. But if such an apparatus should be adopted here as has been put in operation at the Observatories of Greenwich, Liverpool, St Helena, Cape of Good Hope, and Madras, the correct time might (by one operation, hardly taking longer than the present plan of notification of the error of the clock) be published to all the country within several miles of Edinburgh. But the necessary machinery is unfortunately far beyond the means of either the Institution or the Observatory as at present constituted.*

Then, again, as other classes of observations besides those actually made, have been frequently called for from the Observatory by the scientific public, and by Members of the Institution itself, and as the Astronomer has been wished to devote part of his time to opening a class in the University, and to attending to the interests of the "Popular Observatory and Physical Cabinet," a serious question has now arisen as to whether the present force is sufficient to carry into effect all the purposes both originally and subsequently proposed? Whether these latter can be introduced at the expense of the former? or, should these be found too important to allow of being interfered with, when their research has been so successfully commenced; then, whether the newer projects can be allowed, consistently with a due regard to science, to fall to the ground, should the Institution be unable of itself to place its Observatory on a footing suited to the requirements of the time?

The experience of the last ten years, appears to shew, that, for the particular branch of Astronomy which was so emulously chosen as the elevated, and worthy object of pursuit for the Observatory of the Scottish capital, the establishment of an Astronomer and one Assistant is barely sufficient. For, while they both laboured with consummate ability and untiring zeal,—the computations, by far the longer and more laborious part of the work, continually fell more and more behind the observations. For the future, a rather different system and other objects for observation might perhaps be adopted; so that the calculations, being then less onerous, might be brought completely within the power of two individuals. But when once a definite aim and object has been given to any one Observatory; no change, but on account of some very grave and important reason, should be attempted. For, unless the Observations are pursued through a long interval of time, the results obtained may not be worthy of the confidence, which anything emanating from a public Establishment should always be able to claim; while, if the whole system be much curtailed, then, from the peculiarity attending Astronomical Observation, the work necessary for finding the exact position and adjustments of the instruments, and which teaches nothing new, will occupy nearly the whole available time of the observers.

---

* The particular plan proposed, is to erect a time ball, similar to that at Greenwich, on the top of Nelson's Monument on the Calton Hill. A large black globe (5 or 6 feet in diameter) is raised up to the top of a pole, on which it traverses, at five minutes before any appointed hour, say one o'clock. Exactly at one, the ball is allowed to drop, and by particular contrivances to hasten the first part of its descent, the commencement of the fall, as shewn by the apparent separation of this ball from a cross-bar fixed to the top of the pole, may be judged of to a small fraction of a second.

The Nelson Monument, from its great height, and the commanding eminence on which it stands, would be a most admirable situation for such a telegraph, especially for the city, as the lofty tower is seen all the way up Princes Street, which leads through the heart of the New Town,—an advantage unfortunately not commanded by the Observatory buildings, though so very close to the Monument.

A writer of acknowledged eminence in Astronomical science exhibited, in a late publication, very clearly what the establishment of a regular Meridian Observatory should be. "The following remarks," says he, "are perhaps self-evident, but nevertheless seem to have escaped the attention of some of those who have founded Observatories. It is not enough that a splendid building is filled with magnificent instruments, directed by a consummate Astronomer; he must have at his disposal numerous subordinate assistants for observation and computation, and funds for printing the Observations and results. At present, Greenwich is almost the only Observatory which is tolerably manned; and even Greenwich is under-handed for *Fundamental Observations.* These require that the state of the Clock, of the Transit, and of the Circle, should be known at all times, in order that every other Observation may be available. Now this alone nearly absorbs the time of two Assistants, and gives just the same trouble, whether many or few additional Observations are made. If we are correct in this view, an Observatory of this class produces new matter almost in proportion to Observers above two. Without insisting very strictly on the exactness of this rule, we say confidently, that an additional Assistant at Greenwich, Cambridge, Edinburgh, or Oxford, would do more good than two better men in a new Observatory. What is wanted is greater force in all these Observatories, if they are expected to keep up their present volumes of Observations; *or the consequence will necessarily be, that, being tasked beyond their strength, they must give in, from weariness or sickness.* It is only in the English Observatories, and since the Astronomer-Royal set the example at Cambridge, that all the Observations are completely reduced and published, within a short time of their being made; and yet, without this publication and reduction, what is the use of an Observatory?"

Not two years after the appearance of this lucid statement, Professor Henderson, the Astronomer to whom, perhaps, it most closely applied, "tasked beyond his strength, gave in from sickness," and sank a premature victim to his overpowering exertions. With only one assistant, he made, during his few years of tenure of office, upwards of 60,000 observations, a number fully equal to those produced by other Observatories far more strongly manned. In the greater work of reducing and printing, he had got about half-way through, and had published the results so far, in five quarto volumes.

On the necessity of cultivating Meteorology and Magnetism in Modern Astronomical Observatories, the Report of the British Association for the advancement of Science, in the year 1840, presents some very powerful remarks.

The following introductory passage, which that extensive Society of the master-spirits of the empire in the present age, has given to the world, with the stamp of its confirmation and authority, will shew the importance with which the suggestions in that report, are regarded by those who have been pre-eminently elected by nature as the representatives of the scientific public.

"In fulfilling the responsible duty," says the document in question, "of pointing out the more conspicuous deficiencies of our knowledge, and the kind of observation, experiment, or reasoning, by which these blanks may be supplied, the reporter does not lay himself open to the charge which has sometimes been very needlessly preferred, that he is only attempting to stimulate where there is more than energy enough,—that the tide of science is in such full flow, that any external or partial impulse does no more than propagate a local disturbance; that the grand prime-movers,—the wants, ambition, and restless curiosity of men,—would act just as strongly, without assistance or direction, in urging the mighty mass forward in its regulated course; and that at the same height precisely, and at its appointed hour, will its proud waves be stayed. Let us remember that, even admitting the sufficiency of labourers and of enterprise, it is necessary that this power should receive a useful direction, that it may not be wasted by misapplication, enfeebled by diffusion, and degraded to unworthy ends. He who points out distinctly where energy may be usefully applied, who concentrates scattered and disunited forces, who holds up continually to view the demands of science as worthy of individual pursuit and national encouragement, in opposition to the popular call for the bare quantum of information gleaned from desultory experience, which may penuriously supply the exigency of the moment,—he it is, who contributes to the ultimate economy of mental labour, to the advancement of substantial knowledge, and, it may be, to raise the intellectual character of his country."

In the section on Public Observatories, the 316th paragraph says, " It is of little use complaining of the past neglect of Meteorological Observations in Astronomical Observatories. Some attempt is now being made to combine with them a system of Meteorological Observation, or, what is better, to institute Magnetic Meteorological Observatories, and generally, Physical Observatories. The vast sums of money which have been spent *in doing over again* what has been better done elsewhere, in determining Astronomical data, might have almost created new sciences of observation."

320. " The Observatories fitted out under the direction of the British Government and East India Company, combine Meteorological with Magnetic Observations every two hours of the day and night. It is matter of regret (though it is to be hoped the regret is a temporary one), that whilst these admirable means of observation have been sent to both hemispheres, and to the antipodes, none have been established at home. ' There is not, in any part of the British Islands, a Meteorological Register which can be called authentic, in respect of the three qualifications which should be the special objects of Public Observatories :—

" 1. To furnish standards of comparison.
" 2. To establish the laws of phenomena.
" 3. To fix *sæcular* or normal data."

The necessity for cultivating more than pure Astronomy in National Observatories, is here assuredly depicted, both in thoughts which glow, and in words that burn; and those who agree in the introductory exposition, will doubtless do their best to have the notorious deficiencies so clearly pointed out, efficiently supplied.

The latter sentences quoted, have, perhaps, too generally given rise to the erroneous opinion, among those who have not inquired very deeply into the subject, that all Astronomers have hitherto been neglecting a portion of their bounden duty; that not a few have incurred the bitter severity of the reproach of " spending vast sums of money in *doing over again* what has been *better* done elsewhere."

It must be remembered, however, that (whilst Astronomy is a science which still presents as boundless an extent of unknown regions, as when the greatest philosopher and astronomer that the earth has yet seen, said, that, through the long labours of his life, he had been but gathering a few pebbles on the shore of the infinite ocean of knowledge) the greater number of Astronomical Observatories were established for Astronomical purposes only, and, for such, are, in almost all instances, grievously undermanned. In many cases where there *are* instruments and observers, there may not be a sufficient strength for keeping up the computations, or of funds for printing the results; in more cases, perhaps, there are no sufficient observers even for making the observations. Under such circumstances, it would be cruelly unjust to include in an indiscriminate condemnation, with such as may be really reprehensible, many Astronomical Observatories, because they do not prosecute a science for which they were not intended, and may not even have the requisite instruments.

It has been far too generally supposed, too, that Astronomers, labouring continually on one branch of the science, must be doing the same work over and over again; whereas the heavens are in such a continual state of change, that very recently an eminent Mathematician and Astronomer emphatically declared, that persons in charge of public observatories, who should, even in the pursuit of physical science, neglect to record the appearances on the face of the sky, in their own times, *would be branded hereafter as the defrauders of posterity.* For any particular phenomenon or cosmical state at any one moment, will never be repeated again, as long as creation lasts; and if the observation at the instant is neglected,—all the exertions of posterity, even with an improved geometry, will be totally unable to supply the omission so culpably made by a person bound to his duty by more than official ties.

While thus gathering hints and assistance for our future progress from all sides, we may rest satisfactorily assured, that none of the reproaches can, in the most distant way, apply to the Edinburgh Observatory, and its late talented Director; for, placed with his one assistant in charge of astronomical instruments which might well have employed three times that number of persons, he laboured for years, with unexampled skill and perseverance, through the mass of work laid before him, till at length he sank under his exertions, and sealed with a premature death his inextinguishable love for the science, and his determination, striving, even to the grave itself, to prevent *his* ever being considered "to have defrauded posterity of information of any important astronomical phenomena which had happened in his own time."

And such was his irrepressible ardour, that, even with the fatal result inevitably impending, when it had already been predicted in print, as the necessary consequence of such undying exertion,—of a tension of the faculties never relaxing,—he yet began, and continued to his latest tenure of life, a series of Thermometrical Observations, of a particularly comprehensive description, proposed by Professor Forbes, on the temperature of the soil at different depths; and even commenced a regular Meteorological Journal, but this last was found to interfere far too much, considering the smallness of the establishment, with the more immediate Astronomical duties.

However great, then, the importance of keeping up, at least the present force for Astronomy in a National Observatory,—and it is, undoubtedly, the science which best repays the care bestowed on its cultivation, for its principles are so well known and perfectly established (being the only inductive science which has a real theory,—one which can account for *all* observed phenomena), that inquiries may always be made in none but the right and useful direction; and Astronomy has, accordingly, exhibited the longest line of continual steady advance and improvement, and still shadows forth the grandest results, and the widest fields for the exercise of intellect, as awaiting the cultivators of a science of which we are even now only on the threshold:—we yet gather from the opinions of all the scientific men in the kingdom, and from the devotional example of the late Professor, that other Physical Sciences besides Astronomy should be cultivated in a National Observatory; though in the instance of the one on Calton Hill, as of most, if not of all, the inquiry can only be successfully pursued, by increasing the Establishment proportionately to the demands made upon it.

Imbued, then, with these views, and a knowledge of what is expected by the scientific world from Scotland, the country of Maclaurin, the only man who has appeared on the earth since the days of Newton capable of wielding his geometry, "that ponderous instrument of synthesis, so effective in its master's hands, but hardly ever grasped since by any one who could effectively use it; and we gaze at it with admiring curiosity as on some gigantic implement of war, which stands idle among the memorials of ancient days, and makes us wonder what manner of man he was, who could wield as a weapon, what we can hardly lift as a burden:" fully appreciating all that might, and all that ought, to be done here, the older Members of the Astronomical Institution came to the conclusion, that the only way practically and effectually to accomplish their exalted purposes, would be, by presenting the whole of their property to the Crown, to get the Private Observatories of the Institution, the Scientific one, and the Popular one, with the Physical Cabinet, erected into the Government Observatory for the Scottish Capital; the Institution having no funds of its own wherewith to make these improvements and additions; and, as at present constituted, a private association without any hope or claim for receiving more assistance from the Crown. But let the Establishment only once be made a National one, and it must then, for the honour of the Kingdom, be placed and kept on a foundation suited to the times.

At an Adjourned Extraordinary General Meeting of Proprietors and Subscribers, held within Douglas's Hotel, on Thursday 30th July 1846,—

PRESENT,

General Sir T. M. Brisbane, Bart., in the Chair, Sir G. S. Mackenzie, Bart., Professor More, Robert Stevenson, Esq., Thomas Thomson, Esq., Alexander Adie, Esq., J. T. Gibson-Craig, Esq., Charles Oliphant, Esq., Walter Nichol, Esq., Robert Bryson, Esq., J. Gibson Thomson, Esq., Dr Neill, Alexander Cowan, Esq., James Nairne, Esq. for Mrs Lilias, Berwick, John Deuchar, Esq., Dr Maclagan, Professor Kelland, Professor Smyth, and J. P. Bertram, *Secretary*.

Professor More moved, and Mr Gibson Thomson seconded, "That the Report of the Committee appointed on 10th June be approved of, and that the Committee be reappointed, with authority to carry into effect the recommendations contained in that report."

Mr Nichol moved, as an amendment, and Mr Deuchar seconded, "That the present meeting consider it inexpedient to change and limit the objects of the Institution, as proposed in the resolutions of the Committee, involving, as they do, an interference with the rights of others who may not assent to the proposed alterations, and probably infringing the conditions on which the property on the Calton Hill is held from the Town. That, in any arrangement to be come to, special provision be made for keeping up the Popular and Initiatory Observatory included in the original designs, in which the public may be gratified with a view of the more interesting Celestial Phenomena, without interfering with the operations, or endangering the delicate and expensive instruments of the Scientific Observatory, and in which students of science may have an opportunity of examining the properties, handling and using the various angular instruments necessary in Navigation, Civil and Military Surveying, and other important subjects."

Mr Stevenson desired that the letters from Mr Mackay and himself, which are before transcribed, should be read; and this having been done, he moved, "That a detailed estimate of the necessary repairs be procured and laid before the Institution, with a view to framing a Memorial to Government for a grant to make them."

Professor More's motion was then put to the vote, and was carried by a majority of 14 to 3.

Mr Nichol protested against the resolution, for the reasons stated in his amendment.

Mr Thomas Thomson moved, and Dr Neill seconded, "That it be an instruction to the Committee to recommend strongly to Government to continue and uphold the present Popular Observatory, and to make it as efficient as possible for instruction in the use of the ordinary Nautical and Surveying Instruments;" which motion having been put from the Chair, was carried unanimously.

Mr Nairne moved, "That, previously to entering into this arrangement, the Committee endeavour to make a better bargain for the transference of the whole concern to Government, to the effect of procuring some return, how small soever, to the Proprietors, for the large sum of money which they have expended upon the Institution. Even so little as two or three pounds per share would be a boon to some of the poorer proprietors, so that by requiring a premium of L.500 in addition to the payment of the debts and liabilities of the Institution, this result might perhaps be accomplished." This motion, not having been seconded, was not put.

Professor More's motion, subject to the recommendation contained in Mr Thomas Thomson's motion, was accordingly declared to be the resolution of the meeting,—under Mr Nichol's dissent and protest.

LIST OF PRESENTS *received by the* ROYAL OBSERVATORY OF EDINBURGH, *from January* 1, *to September* 30, 1846.

DATE.		DONORS.
1846.		
March 4.	Report to the Secretary of the United States Navy, on the formation of a Depot for Charts and Instruments. 8vo, 1845,	*Lt. J. M. Gillis, R.N.*
	Philosophical Transactions. Part II., 4to, 1845,	*Royal Society.*
	Annales de l'Observatoire Royale de Bruxelles. Tome IV., 4to, 1843,	*A. Quetelet.*
	Bulletin de l'Academie Royale de Bruxelles. 2me. Partie, Tome XI., 8vo, 1844, et 1re. Partie, Tome XII., 8vo, 1845,	....
	Annuaire de l'Observatoire Royale de Bruxelles, 12mo, 1845,	....
	Resumè des Observations Magnetiques et Meteorologiques, Extrait du Tome XVIII., des Memoires de l'Academie Royale de Bruxelles, 4to, 1844,	*A. Quetelet.*
	Rapport presenté a M. Le Ministre de l'Interieur, 12mo, 1844,	....
	Greenwich Magnetical and Meteorological Observations, 4to, 1843,	*Royal Society.*
	Academie Royale de Bruxelles. Extrait du Tome xiii., des Memoires, Observations des Phenomene Periodiques, 4to, 1844,	*A. Quetelet.*
March 20.	British Association Catalogue of Stars, 4to, 1845,	*British Association.*
April 8.	Analen der k. k. Sternwarte in Wien. Vol. I.—IV., New Series, 4to, 1845,	*Vienna Observatory.*
	Bulletins der Konig. Akademie der Wissenschaften, 4to, August 1843, September 1844,	....
	Abhandlungen der Math. Phys. Classe der Akademie der Wissenschaften. Vierten Bandes, 4to, 1844,	....
April 17.	Fifteenth Volume, Memoirs of Royal Astronomical Society of London. 4to, 1845,	*R. Ast. Soc., London.*
	Monthly Notices of Royal Astronomical Society of London. Nos. 9–13, Vol. VI.; Nos. 1–5, Vol. VII, 12mo, 1845–6.	....
April 27.	Mezzotint Engraving of Portrait of the late Francis Baily, Esq.,	*Rev. R. Sheepshanks.*
	... ... Sir J. F. W. Herschel, Bart.,	....
	Lithograph representing Newton's Statue, by Roubilliac, in Trinity College, Cambridge. Folio,	*Rev. Charles Turnor.*
May 2.	Bulletins de Kon. Akademie der Wissenschaften. 4to. September 1844, to January 1846,	*L'Academie Royale de Science a Munich.*
	Andentungen zur characteristif des organischen Lebens. Von Dr A. Wagner. 4to, 1845,	....
	Abhandlungen de Math. Phys. Classe der Kon. Bayerischen Akademie der Wissenschaften. Vierten Bandes, Zweite Abtheilung. 4to, 1845,	....
	Akademischer Almanack auf des Jahr. 12mo, 1845,	....
June.	Monthly Notices of Royal Astronomical Society of London. Nos. 7 and 8, Vol. VII, 8vo,	*R. Ast. Soc., London.*
Sept. 18.	Observations, of the Places of certain Stars in the British Association Catalogue, made at the Durham Observatory. 4to, 1846,	*Rev. Temple Chevallier.*
Sept. 30.	Paper on the arrangement of an Observatory. 8vo,	*Henry Lawson, Esq.*

STORAGE